DOCUMENT RESUME

ED 183 259 PS 011 232

AUTHOR	Hosek, James R.
TITLE	The AFDC-Unemployed Fathers Program and Welfare Reform.
INSTITUTION	Rand Corp., Santa Monica, Calif.
SPONS AGENCY	Social and Rehabilitation Service (DHEW), Washington, D.C.
REPORT NO	R-2471-HEW
PUB DATE	Aug 79
GRANT	SRS-18-P-90409/9-01
NOTE	83p.
AVAILABLE FROM	Rand Corporation, Publications Department, 1700 Main Street, Santa Monica, CA 90406 ($5.00)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Economic Factors; Eligibility; *Family Involvement; *Family Programs; *Fathers; Federal Regulation; *Program Costs; *Unemployed; *Welfare Services
IDENTIFIERS	*AFDC Unemployed Fathers Program

ABSTRACT

This research investigates the determinants of family participation in the Aid to Families with Dependent Children-Unemployed Fathers (AFDC-UF) program, and projects the changes in caseload and cost that would arise under selected program modifications. The modifications include extending the UF program to all states, setting a nationwide benefit floor, and relaxing certain eligibility requirements. The analysis indicates that (1) the traditionally low UF caseload does not mean that the program is ineffective; (2) eligibility rules appear less influential than labor market opportunities and unemployment insurance in determining family participation in UF; (3) foreseeable modifications of the UF program would not cause drastic changes in caseload and cost; and (4) after alterations the UF program would still be less expensive and have narrower coverage than a negative income tax. (Author/JMB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED183259

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

THE AFDC–UNEMPLOYED FATHERS PROGRAM AND WELFARE REFORM

PREPARED UNDER A GRANT FROM THE U.S. DEPARTMENT
OF HEALTH, EDUCATION, AND WELFARE

JAMES R. HOSEK

R-2471-HEW
AUGUST 1979

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

Rand Corp.

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

$5.00

Rand
SANTA MONICA, CA. 90406

PS011232

This Project was supported by SRS Grant No. 18-P-90409/9-01, U.S. Department of Health, Education, and Welfare, Social and Rehabilitation Service, John K. Maniha, Project Officer (Office of Planning, Research, and Evaluation). Views or conclusions contained in this study should not be interpreted as representing the official opinion or policy of the U.S. Department of Health, Education, and Welfare.

Library of Congress Cataloging in Publication Data

Hosek, James R[illegible]
The AFDC-unemployed fathers program and welfare reform.

([Report] - Rand Corporation ; R-2471-HEW)
Bibliography: p.
1. Welfare recipients--United States. 2. Unemployed--United States. 3. Insurance, Unemployment--United States. 4. Public welfare--United States. I. United States. Dept. of Health, Education, and Welfare. II. Title. III. Series: Rand Corporation. Rand report ; R-2471-HEW.
AS36.R3 R-2471 [HV95] 081s [361.6'0973]

ISBN 0-8330-0154-X 79-20126

The Rand Publications Series: The Report is the principal publication documenting and transmitting Rand's major research findings and final research results. The Rand Note reports other outputs of sponsored research for general distribution. Publications of The Rand Corporation do not necessarily reflect the opinions or policies of the sponsors of Rand research.

Photograph by Mark Menchik, taken at
East 74th Street and York Avenue, New York City

Published by The Rand Corporation

PREFACE

Over the past few years, the Aid to Families with Dependent Children–Unemployed Fathers (AFDC-UF) program has gained recognition as a means of extending the income maintenance coverage of husband-and-wife families. Unlike a negative income tax, which would entail large-scale programmatic change, AFDC-UF policy options involve incremental modifications of an existing income support program. To assess the possibilities of AFDC-UF as a basis for welfare reform, the present research analyzes the determinants of family participation in the program. Information on the determinants is then used to evaluate alternative policies for extending the program. Support for the research has come from the Social and Rehabilitation Service of the U.S. Department of Health, Education, and Welfare.

Further information on family income and behavior under different kinds of income maintenance programs may be obtained in the following Rand publications:

Rodney T. Smith, "Welfare Reform and Housing Assistance," R-2333-HUD, forthcoming.

James R. Hosek, *Family Participation in the AFDC-Unemployed Fathers Program*, R-2316-HEW, August 1978.

John F. Cogan, *Negative Income Taxation and Labor Supply: New Evidence from the New Jersey-Pennsylvania Experiment*, R-2155-HEW, February 1978.

David W. Lyon, Philip A. Armstrong, James R. Hosek, and John J. McCall, *Multiple Welfare Benefits in New York City*, R-2002-HEW, August 1976.

David H. Greenberg and James R. Hosek, *Regional Labor Supply Response to Negative Income Tax Programs*, R-1785-EDA, February 1976.

SUMMARY

This research investigates the determinants of family participation in the Aid to Families with Dependent Children–Unemployed Fathers (AFDC-UF) program, and projects the changes in caseload and cost that would arise under selected program modifications. The modifications include extending the UF program to all states, setting a nationwide benefit floor, and relaxing certain eligibility requirements. The analysis indicates that (1) the traditionally low UF caseload does not mean that the program is ineffective; (2) eligibility rules appear less influential than labor market opportunities and unemployment insurance in determining family participation in UF; (3) foreseeable modifications of the UF program would not cause drastic changes in caseload and cost; and (4) after alterations the UF program would still be less expensive and have narrower coverage than a negative income tax.

DETERMINANTS OF FAMILY PARTICIPATION IN THE AFDC-UF PROGRAM

Family participation in the AFDC-UF program has been low—a rate between 15 and 30 percent of eligible families, which is well below the participation rates of other major income transfer programs. This low rate raises the questions of whether the program has been effective in reaching its target population, and further, whether it is a reliable basis for expanding the income maintenance coverage of working poor families. The UF target population consists of husband-and-wife families with children, in which the husband is unemployed or underemployed. (For a description of AFDC-UF eligibility requirements, see Table 1, in the text.)

Our results on the determinants of family participation in UF address those questions. To our knowledge, this report's analysis of family participation in UF is the first to use family-level data as opposed to more aggregate and potentially less precise data. In summarizing the study, we begin with a review of our findings on the major hypotheses bearing on UF participation, and then discuss the implications of these results for specific UF policy options. Incremental caseload and cost projections are given for each of the options.

Market Opportunities

A key to understanding UF participation is that, although families are more likely to participate as UF benefits rise, most of them choose not to participate because the husband and wife have higher earnings opportunities in the job market.

The pull of market opportunities is revealed in the small percentage of husband-and-wife families with children that are predicted to participate in UF in a given month. These predicted percentages, which derive from our model of family participation in UF, are displayed in Table S.1 by the wage class of the husband.

Table S.1

PREDICTED UF PARTICIPATION, HUSBAND'S POTENTIAL EARNINGS, AND ACTUAL FAMILY EARNINGS, BY HUSBAND'S WAGE CLASS, 1975

Husband's Wage Rate ($/hr)	Predicted Monthly Percent of All Husband-and-Wife Families with Children on AFDC-UF[a]	Husband's Potential Annual Earnings[b]	Family's Actual Annual Earnings[c]
<2.00	1.67	3,120[d]	7,516
2.00-2.99	1.00	5,200	9,344
3.00-3.99	0.76	7,280	11,149
4.00-4.99	0.71	9,360	12,849
5.00-5.99	0.55	11,440	15,239
6.00-6.99	0.46	13,520	17,515
7.00-7.99	0.36	15,600	20,243
8.00-8.99	0.28	17,680	22,943
9.00+	0.21	24,960[e]	30,286

[a] Based on model of family participation in AFDC-UF presented in this report.

[b] Midpoint of husband's wage class x 40 hr per week x 52 weeks per year.

[c] Arithmetic average of family earnings, taken over all families in each wage class. Families are husband-and-wife with children less than age 21; husband less than age 65, not incapacitated, not in armed forces or institution. Source: Survey of Income and Education.

[d] Wage rate assumed to be $1.50/hr.

[e] Wage rate assumed to be $12.00/hr.

For these families the husband is typically the primary earner, and his wage rate affords a ready measure of his earnings capacity. As the table shows, the higher the husband's wage rate, the lower is family participation in UF.

Women's earnings further reinforce the point. Over the past decade, the labor force participation rate of women has risen substantially. Much of the increase can be attributed, surprisingly, to married women with children. To understand the effect of this trend on family earnings, and hence on a family's decision not to participate in UF, compare the third and fourth columns of Table S.1. Column 3 indicates what the annual earnings of the husband would be if he worked full time (40 hours a week) throughout the year (52 weeks, including paid vacation). Column 4, in contrast, presents the average value of actual family earnings. In every case, actual family earnings exceed the husband's potential earnings by a considerable amount. For example, a husband earning $3.50 an hour could gross $7280 a year, but average family earnings in that wage class exceeded $11,000 in 1975. Less than one percent of all families in the $3.00 to $3.99 per hour wage class are predicted to participate in UF in any month.

Further support for the importance of family earnings opportunities may be found in comparing average family earnings with the level of benefits a family might expect on UF. Participation in UF in 1975 automatically entitled a family to AFDC, Food Stamp, and Medicaid benefits. (We omit Medicaid benefits because they have proved difficult to value for a family.) AFDC benefit schedules vary from state to state, as does the sum of AFDC benefits plus net Food Stamp benefits (see Fig. 3 in the text). Assume for illustration that an average family could receive up to $400 a month in AFDC and net Food Stamp benefits. That would imply an annual benefit income of $4800, which falls far below average family earnings even in the lowest wage class. However, if the family has an illness that generates high health costs, the availability of Medicaid as an adjunct to UF could be a significant inducement to participate.

Summarizing, the UF participation rate is low partly because many families prefer work over welfare; and, as family earnings opportunities increase, the expected percentage of families on UF diminishes. Also, many families have multiple earners, and as a consequence actual family earnings tend to overwhelm benefits available under UF.

Unemployment Insurance

When the husband becomes unemployed, the family can seek income assistance from Unemployment Insurance (UI) and, in states offering the program, UF. We find that in deciding which program to enter, families appear to treat UF and UI as substitutes: As UI benefits increase, families are less likely to participate in UF. Two factors bolster this finding and suggest why families would tend to choose UI over UF.

First, UI benefit schedules are often more generous than those of UF and tend to grow more so as the husband's wage rate rises and family size declines. Only in the case of low-wage husbands with large families do UF benefit schedules tend to be the more generous. These patterns arise because of the way UI and UF benefit schedules are defined. Roughly speaking, UI benefit schedules rise with wage rate up to a benefit ceiling and do not depend on family size, while UF benefit schedules rise with family size and do not depend on wage rate.

Second, UI benefit schedules are person-specific but UF benefit schedules are family-specific. The computation of UI benefits for the unemployed husband will ignore any family income deriving from the wife's earnings or from unearned income (interest, dividends, and rent, for example); not so the UF benefit computation. Under UF, unearned income and the earnings of other family members would by and large be deducted from the UF benefit schedule amount in arriving at the family's actual UF benefit payment. Thus a family's actual income could easily be higher with the husband on UI than with the family on UF, particularly if the wife or other family members work or if there is a substantial amount of unearned income. Table S.1 has shown that many husband-and-wife families with children do have multiple earners who account for a sizeable fraction of family earnings. With respect to unearned income, we find that in every wage class the total amount of unearned income exceeded $1000 a year on average in 1975. Upwards of three-fourths of this income comes from nontransfer sources, implying that many families have sources of income available to augment UI benefits and help tide them over periods of joblessness.

In sum, when choosing between UI and UF, many families have good reason to select UI—a further explanation for the low rate of participation in UF.

Although UI may often be preferable to UF, however, many unemployed families could be ineligible for UI. Consequently, a special role for UF might be in offering support to those families. In 1975, a year of high unemployment, significant percentages of unemployed, low-wage husbands reported no UI benefits. This was especially true among the long-term unemployed (15 or more weeks), who made up about 40 percent of all unemployed husbands from husband-and-wife families with children. Among the long-termers, over 40 percent of husbands in the wage class earning $4.00 and below apparently drew no UI benefits, in contrast to 25 percent in the $4.00 to $7.00 an hour range and 20 percent in the over $7.00 an hour range who apparently drew none (Table 15 in the text). The total number of long-term unemployed husbands reporting no UI benefits amounted to over 425,000. We were unable to study how many of the long-term unemployed would qualify for UF.

UF Benefit Level and Assets Tests

In addition to market opportunities and unemployment insurance the UF benefit level and program eligibility requirements also affect family participation in UF. Three chief eligibility criteria are the income test, the assets test, and the 100-hour rule, which limits the husband's work while on UF to no more than 100 hours per month.

In each state there is an arithmetic linkage between the income test and the UF benefit schedule, such that states with more generous benefit schedules also have less stringent income tests. Because of the relationship between the income test and the benefit level, it was not possible to produce separate estimates of the effects of changing the benefit level and the income test. We find that participation in UF rises with the level of UF benefits potentially available to the family, given its size and state of residence. Thus, higher benefit schedules and the more liberal income tests that accompany them lead to greater participation in UF, other things being equal. We discuss below the extent to which the UF caseload responds to certain changes in benefit schedules, specifically, introducing a nationwide benefit floor (and suitable income tests).

Assets tests vary in detail, administration, and enforcement from state to state. All but twelve states permit home ownership without limit on the value of the home. All states place limits on liquid and semiliquid assets (cash, savings accounts, sale value of life insurance policies, stocks, and bonds) but in general exempt household furnishings and appliances and one car. Our statistical analysis reveals no relationship between the stringency of the limit on liquid and semiliquid assets and the size of the state's UF caseload. Consequently, this asset test appears to present little obstacle to family participation in UF. Moreover, the absence of a limit on home value in most states, and the exemption of household goods and an automobile, suggest that asset tests are unlikely to be an effective constraint on UF participation among low- to middle-income families. Such families constitute the vast majority of those likely to participate in UF.

100-Hour Rule

The 100-hour rule is a federally set eligibility criterion. Because all UF states must comply with the 100-hour rule, there is at present no variation across states on which to base an estimate of the effect of such a rule on UF participation. Theory suggests that relaxing or eliminating the 100-hour rule should increase both UF participation and participants' incentive to work. Many UF husbands (actual participants) have a wage sufficiently low that, were they to work on welfare, they would reach the 100-hour limit before earning enough to reach the income limit. In this sense the husbands are potentially constrained by the 100-hour rule. Most UF husbands are unemployed; for example, only 10.5 percent of UF families in California in April 1976 reported employment income from *any* family member. The low percentage employed could in part result from the 100-hour rule. But to the extent—as yet unknown—that many UF husbands would be unemployed even if the 100-hour rule were eliminated, such action would have little effect on the family's decision to participate in UF.

This observation is reinforced by the presence of the income test. Like the 100-hour rule, the income test has the effect of limiting family earnings opportunities on UF. Even if a limit on husband's hours of work were completely removed, the work behavior of the family on UF would still be constrained by the income test. However, because income tests vary from state to state, the effect of eliminating the 100-hour rule would also vary across states. In states with less binding income tests (higher UF benefit schedules), removing the 100-hour rule could result in more work and higher earnings without subsequent disqualification through the income test. Such states should experience relatively larger increases in UF participation upon removal of the 100-hour limit, although again the actual increases will probably be small.

We are led to conclude that eligibility criteria are only secondary determinants of family participation in UF. The primary determinants appear to be family earnings capacity, the availability of jobs in the private sector, and, during periods of unemployment, the availability of unemployment insurance. The low level of participation in UF is not a symptom of program ineffectiveness then, but the consequence of families responding rationally to more lucrative opportunities.

CASELOAD AND COST PROJECTIONS

The federal government could increase the income support available to married, spouse-present families with children by mandating UF to non-UF states. An important variant of this policy option would be to *also* introduce a nationwide floor on the level of benefits, which is assumed to be accompanied by an easing of the income test in each state to a level commensurate with the benefit floor. Under the assumption that existing eligibility rules are unchanged, apart from adjustments in states' income tests, we have thus estimated the caseload and cost of three policy options: (I) instituting UF in non-UF states subject to existing benefit levels by state, (II) establishing a nationwide benefit floor equal to 75 percent of the poverty line, and (III) establishing a nationwide benefit floor equal to 100 percent of the poverty line. Throughout these projections, benefit levels are defined as the state's AFDC level of assistance for each family, given its size, plus the net Food Stamp benefits corresponding to the level of assistance. Medicaid, housing, and other benefits are not included, nor are there any adjustments for cost-of-living differences between states. Because of the way the cost estimates have been constructed, the figures should be viewed as upper bounds on the direct program costs.

The estimates are based on the statistical analysis of the determinants of family participation in UF. If future family behavior differs markedly from past behavior, or if legislation changes the basic character of the UF program, the estimates presented here may differ greatly from future reality.

If the UF program, which was offered in 27 states in 1975, had been mandated to all states, the UF caseload would have risen by 34,000 families, from 117,000 to 151,000 (Table S.2). The small size of the increase can be traced to the fact that non-UF states tend to be less populous and to have lower AFDC benefit levels than UF states. The average AFDC level of assistance for a family of four in 1975 was over $100 a month higher in UF states than in non-UF states, $330 versus $227. If, in addition to mandating UF, a nationwide benefit floor equal to 75 percent of the poverty line had been established, another 3500 families would have participated in UF. In this case the increment in caseload is modest because most states have AFDC levels of assistance high enough so that, when net Food Stamp benefits are added, the total approaches or surpasses 75 percent of the poverty line (see Fig. 3 in the text). A more generous benefit floor of 100 percent of the poverty line would have added 40,000 families, bringing the total UF caseload to 191,000.

These projections demonstrate that UF caseload is not overwhelmingly sensitive to even large increases in the benefit level, and that a nationwide UF program, under existing eligibility requirements and plausible benefit levels, would entail only a small caseload. The 151,000 cases represent 0.56 percent of the 26.5 million working-age, husband-and-wife families with children in the United States in 1975. (Caseload projections for each state appear in Table 9 in the text.)

Table S.2

PROJECTED TOTAL AND INCREMENTAL UF MONTHLY CASELOAD, BY POLICY OPTION

Policy	Non-UF States	UF States	All States
A. Projected Total UF Caseload (1975)			
Base			
Mandating UF to all states	34,100	116,900	150,900
Add On			
Benefit floor = 75% poverty line	37,600	117,100	154,700
Benefit floor = 100% poverty line	61,100	130,000	191,100
B. Projected Incremental UF Caseload (1975)			
Base			
Mandating UF to all states	34,100	0	34,100
Add On			
Benefit floor = 75% poverty line	3,500	200	3,700
Benefit floor = 100% poverty line	27,000	13,100	40,200

Option I, mandating UF to non-UF states under existing benefit schedules, would have added 70 percent to federal outlays for AFDC-UF in 1975. The total cost to all governments would have been $13.4 million per month, or $161 million per year (Table S.3). Of the monthly amount, $9.2 million arises from AFDC benefits and $4.2 million from Food Stamp bonuses. Assuming that existing AFDC cost-sharing arrangements were maintained, the federal government would pay about 60 percent of the $9.2 million, or $5.5 million. The Food Stamp program is wholly federal, so the added federal outlay under option I amounts to $9.7 million per month ($116 million per year), or just over 70 percent of the monthly cost of $13.4 million. Option II (benefit floor = 75 percent of poverty line) would have been slightly more expensive, whereas option III (benefit floor = 100 percent of poverty line) would be double the cost of option I. Most of the extra cost would appear as federal expenses in the form of supplemental payments to reach the benefit floor.

Table S.3

PROJECTED INCREMENTAL MONTHLY COST, BY POLICY OPTION
(In $ million per month)

Policy	Non-UF States	UF States	All States
A. Projected Incremental Cost (1975)			
Base			
Mandating UF to all states	13.4	0	13.4
Add On			
Benefit floor = 75% poverty line	1.8	0.1	1.9
Benefit floor = 100% poverty line	16.4	9.3	25.7
B. Sources of Incremental Cost (1975)			
Base			
Mandating UF to all states			
AFDC benefits	9.2	0	9.2
Food Stamp Bonus	4.2	0	4.2
Total	13.4		13.4
Add On			
Benefit floor = 75% poverty line			
AFDC benefits	0.6	0.04	0.6
Food Stamp Bonus	0.5	0.03	0.6
Federal Supplement	0.7	0.04	0.7
Total	1.8	0.1	1.9
Benefit floor - 100% poverty line			
AFDC benefits	5.4	4.5	9.9
Food Stamp Bonus	4.0	1.8	5.8
Federal Supplement	7.0	3.0	10.0
Total	16.4	9.3	25.7

As mentioned above, the policy projections are based on the assumption that UF eligibility rules remain constant. We note here that a recent U.S. Supreme Court ruling, *Califano* v. *Westcott* (June 1979), has the effect of extending the UF program to families with unemployed wives. While this ruling occurred too late to become part of the quantitative policy analysis, we expect the increase in cases brought about by the ruling to be severalfold below the 630,000 poor families with working wives in 1975. Some of these families, although below the poverty line, will nevertheless have incomes that exceed the AFDC income limits and hence will be ineligible. In other cases, the unemployed wife may be eligible for and choose to participate in unemployment insurance rather than in the AFDC-Unemployed Parent (nee Unemployed Father) program. And in still other cases, the family may simply not want to participate in UP.

Moreover, an earlier supreme court ruling, *Philbrook* v. *Glodgett* (June 1975), bore on the question of joint participation in UI and UF. The ruling led to new legislation, the so-called Corman Amendment, that took effect after the year to which our estimates pertain, 1975. The Corman Amendment assures jointly eligible families the right to participate in both UI and UF but in effect stipulates that the family must participate in UI, so that UI income is counted in the computation of UF benefits. Prior to Glodgett, many states prohibited participation in UF until a family had exhausted its UI benefits. Had the effect of the Glodgett decision and Corman Amendment been embodied in our policy analysis, the projected caseload and cost figures probably would have been slightly higher.

Finally, the estimated caseload and cost increases for these UF policy options fall far below similar estimates for hypothetical negative income tax (NIT) programs. Several reasons explain the difference: An NIT would cover husband-and-wife families with or without children, while UF is now limited to those with children; the UF program imposes limits on assets and hours of work, while NIT does not; and simulations of NIT participation may substantially overestimate participation because they do not rely on an empirical analysis of the participation decision, whereas the UF projections are founded on such an analysis. The differences in UF and NIT participation are probably not due to benefit levels or marginal tax rates, for our UF options approximate the benefit and tax schedules proposed for various NITs. The structure of the UF program shares several features with the structure of an NIT but has more restrictions and, monitoring the effect on caseload and cost, the UF program could be gradually transformed into an NIT-like program.

ACKNOWLEDGMENTS

David Arnaudo, formerly with Social and Rehabilitation Services and now Director, Family Assistance Statistics Staff, Social Security Administration, was responsible for initiating the study and securing funding for the project. He has been ably assisted by John K. Maniha, who served as Project Officer. Ken Linder, formerly of HEW, provided valuable assistance in the development of the original research agenda.

David Lyon and Philip Armstrong are foremost among those contributing to the conceptualization and implementation of this research. Richard Buddin provided many valuable insights, diligent research assistance, and excellent programming skills. John Antel also offered outstanding research assistance. The earlier work of Beverly Lowe on eligibility requirements, Patricia Fleischauer on participation rates, John McCall on modeling family behavior, and of Georges Vernez on UF caseloads, deserves mention. Jennifer Hawes helped design the survey of UF families, and James Fink of Chilton Research Services coordinated the survey itself. Bill Allen, Colleen Dodd, and Nien-Ling Wayman provided help during the stage of preliminary data processing, and Will Manning generously contributed a routine to identify data outliers. The quality and presentation of the research have been enhanced by the suggestions of Susan Hosek and the Rand reviewers, Dennis DeTray and Charles Phelps.

The report has benefited substantially from the cooperation of state AFDC officials, particularly Wayne Epperson, Illinois Department of Public Aid; David Fox, Los Angeles County Department of Public Social Services; and Robert Swanson, Michigan Department of Social Services. We are equally pleased to acknowledge the support of Donald Quisenberry, Charles Ventura, and Richard Hoye, Los Angeles DPSS; Charles Fanning, California Employment Development Department; Richard Wade and Ms. Agaliece Miller, Illinois DPA; Leland Hall, Vernon Smith, and Clyde Spenser of Michigan DSS; R. B. Shelton of Wayne County, Michigan, DSS; and Dr. Samuel Stearn, Michigan Employment Security Commission. Finally, we are grateful to many state legislators and advisory staff for discussions about UF origins, legislative intentions, and administration.

CONTENTS

PREFACE iii

SUMMARY v

ACKNOWLEDGMENTS xiii

FIGURES xvii

TABLES xix

Section

I. INTRODUCTION 1
    A Policy Perspective 1
    Conditions of Participation in AFDC-UF 3
    UF Benefits 5
    AFDC-UF Participation Rates 10

II. RESEARCH METHODOLOGY 13

III. THE AFDC-UF HOURS OF WORK REQUIREMENTS 17
    Irrelevance of the Assets Constraint 17
    The Hours Constraint versus the Income Constraint 18
    A Comment on the Wage Structure of the AFDC-UF Father . 20
    When is the Hours Constraint Binding? 21
    Longitudinal Evidence 22
    Prognosis 25

IV. DETERMINANTS OF FAMILY PARTICIPATION IN AFDC-UF 26

V. DETERMINANTS OF AFDC-UF CASELOAD 31
    Importance of Site Effects 31
    Methodology 31
    The Effects of Site-Related Variables 32
    Selectivity Bias 35

VI. CASELOAD AND COST ESTIMATES OF AFDC-UF POLICY OPTIONS .. 37
    UF Policy Options 37
    Distributional Aspects 45

VII. AFDC-UF VERSUS NEGATIVE INCOME TAX PROGRAMS 50
    Introduction 50
    Comparison of AFDC-UF and NIT Participation Estimates . 51

Appendixes

A. COMPUTATION OF THE FOOD STAMP BONUS 55
B. DIFFERENCE BETWEEN AFDC-UF AND UNEMPLOYMENT

INSURANCE BENEFITS, BY HUSBAND'S WAGE RATE AND FAMILY SIZE, FOR LOS ANGELES, CHICAGO, AND DETROIT METROPOLITAN AREAS 57
C. SELECTIVITY BIAS IN THE CASELOAD EQUATION 58
D. ADJUSTMENT FACTOR FOR THE AFDC-UF FAMILY PARTICIPATION MODEL 62

BIBLIOGRAPHY 65

FIGURES

1. AFDC-FG and AFDC-UF Caseload, United States, 1961-1978...... 2
2. States with AFDC-UF Programs in 1975........................ 2
3. AFDC Monthly Benefit Schedule Including Food Stamp Bonus, Four Person Family, 1975 6
4. Unemployment Insurance Benefit Schedule Including Food Stamp Bonus, Four Person Family, 1975 9
5. Research Tasks and Supporting Data Bases 14
6. Income and Hours Limits May Constrain the Husband's Labor Supply on AFDC-UF 19
7. Predicted Probability of State Participation in AFDC-UF Program 60

TABLES

S.1. Predicted UF Participation, Husband's Potential Earnings, and Actual Family Earnings, by Husband's Wage Class, 1975 vi
S.2. Projected Total and Incremental UF Monthly Caseload, by Policy Option x
S.3. Projected Incremental Monthly Cost, by Policy Option xi
1. AFDC-UF Program Eligibility Criteria and Benefits, 1975 4
2. Summary of AFDC-UF Caseload and Participation Rate Estimates 11
3. "Critical Wages," by State and Family Size 23
4. Percentage of Families Potentially Constrained by the 100-Hour Rule: Los Angeles, Cook, and Wayne Counties 24
5. Model of Family Participation in AFDC-UF: Means and Elasticities of Explanatory Variables, by UF Status and Race 28
6. Predicted Annual Incidence and Duration of Unemployment, by Race and Sex 29
7. State AFDC-UF Caseload Model 33
8. UF Monthly Caseload Projections, by State and Policy Option, 1975 39
9. AFDC-UF Participation Rate and Selected Demographic Characteristics, by State, 1975 41
10. Projected Total and Incremental UF Monthly Caseload, by Policy Option 43
11. Projected Incremental Monthly Cost, by Policy Option 43
12. Number of Families with Working Wives, by Poverty Status, 1975 45
13. UF Participation and Family Income, by Husband's Wage Class, 1975 46
14. Unemployment, Receipt of UI Benefits, and Predicted UF Participation Rates, by Husband's Wage Class, 1975 48
15. Numbers and Percentages of All Married, Spouse-Present Families with Children, Participating in AFDC-UF and Negative Income Tax Programs 52
C.1. Model of State Participation in AFDC-UF: Means and Elasticities of Explanatory Variables 59

I. INTRODUCTION

A POLICY PERSPECTIVE

The U.S. income transfer system provides less coverage for married, spouse-present families than for single-parent families. One reason for this is the limited scope of coverage for such families within the Aid to Families with Dependent Children (AFDC) program.

The AFDC program has two components, Family Group (FG) and Unemployed Father (UF). The FG component, which has been the mainstay of AFDC since its inception under the Social Security Act of 1936, is directed toward single-parent families, but includes two-parent families where one parent is incapacitated. The UF component, created in 1961, serves husband-and-wife families in adverse economic circumstances. UF tends to furnish less coverage than does FG because UF families must satisfy certain eligibility requirements (discussed below) beyond those of FG. Also, many states do not offer the UF program; only 26 states and the District of Columbia had a UF program in 1975.

Figure 1 depicts the growth of UF and FG caseloads. At the present time, FG provides aid to over 3.5 million families while UF aids only 120,000 families. UF states, shown in Fig. 2, are typically populous and are generous in their AFDC benefits. Many non-UF states lie in the Sun Belt and the Rocky Mountains. The average AFDC level of assistance for a family of four in 1975 was over $100 a month more in UF states than in non-UF states: $330 a month versus $227.

A straightforward way to increase the coverage of married, spouse-present families would be to mandate UF for all states. An important variant of this policy option would be to introduce a nationwide floor on the level of assistance. Still another variant would be to relax certain eligibility requirements that a family must satisfy before being allowed to participate in UF.

This report examines those alternatives. Because the research logic is multistep and complex, Sec. II describes the structure of the research. Section III discusses the effect of relaxing the requirement that a UF husband work no more than 100 hours per month, which is perhaps the most restrictive of the several, federally set UF eligibility requirements. Sections IV and V analyze the determinants of family participation in UF. Then, drawing upon the statistical models of Secs. IV and V, Sec. VI presents estimates of the caseload and cost of three assumed policy options: (I) instituting UF in *non-UF* states subject to existing benefit levels, (II) establishing a nationwide benefit floor equal to 75 percent of the poverty line, and (III) establishing a nationwide benefit floor of 100 percent of the poverty line. Some distributional effects of these policy changes are also examined: the incidence of family participation in UF by wage class and family income, and among families where the husband has been unemployed. Finally, Sec. VII compares estimated participation rates for negative income tax (NIT) and UF programs. The NIT has been a leading alternative to UF for extending aid to husband-and-wife families.

The remainder of this section reviews the conditions of participation in UF, discusses benefits available under UF and an alternative program, unemployment insurance (UI), and reviews previous work on UF participation rates.

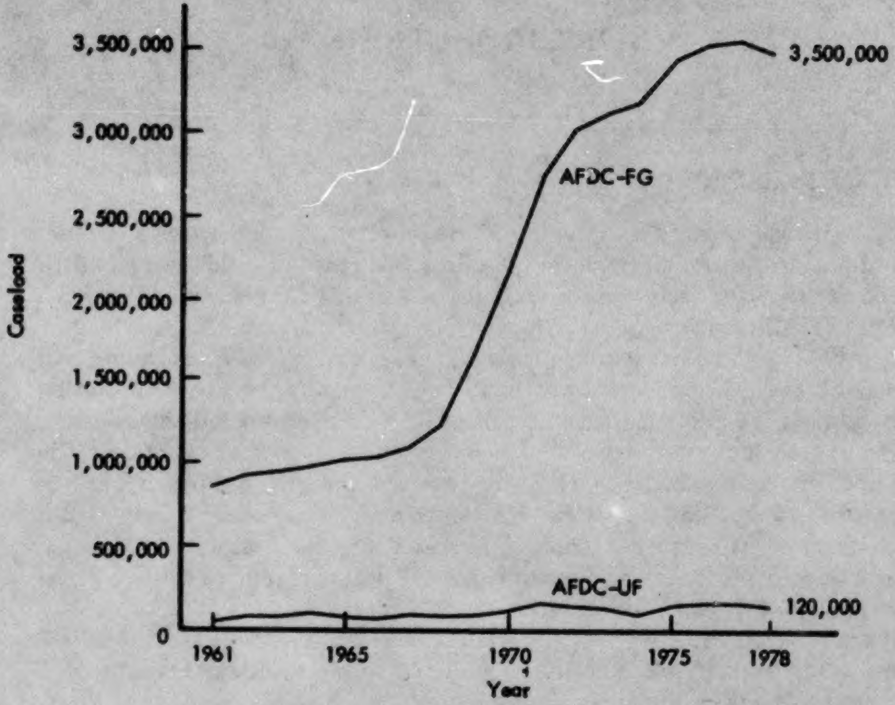

Fig. 1—AFDC-FG and AFDC-UF caseload, United States, 1961-1978

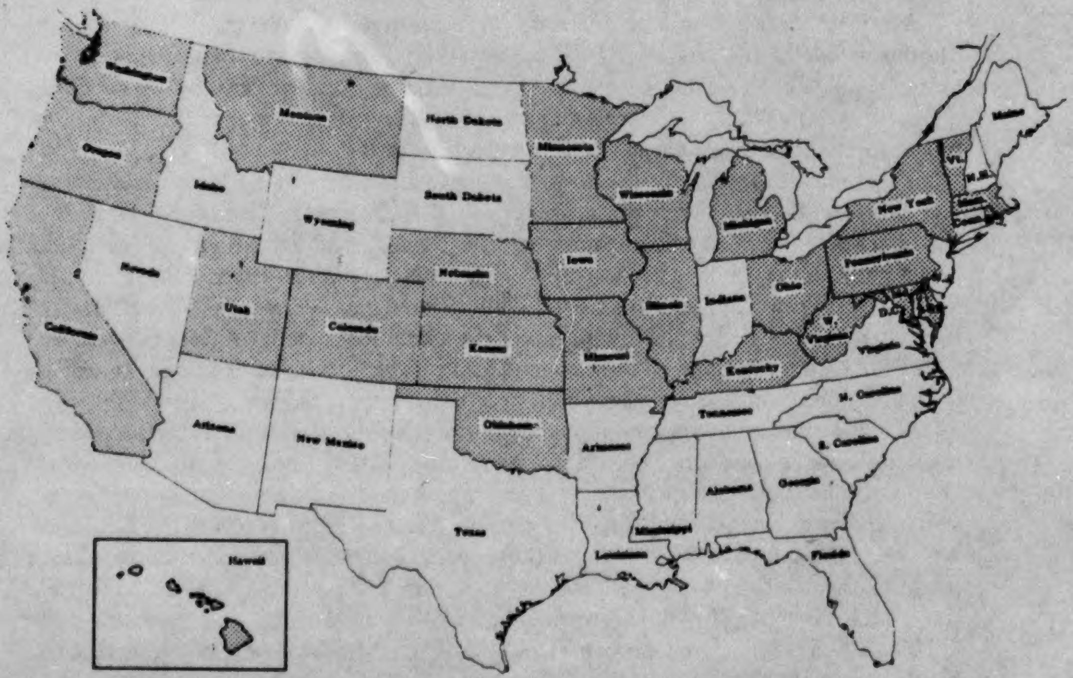
Washington
Oregon
Montana
North Dakota
Minnesota
Maine
Idaho
South Dakota
Wisconsin
Wyoming
Michigan
New York
Vt.
N.H.
Mass.
Nevada
Nebraska
Iowa
Pennsylvania
Utah
Colorado
Illinois
Indiana
Ohio
W. Virginia
D.C.
California
Kansas
Missouri
Kentucky
Virginia
N. Carolina
Tennessee
Oklahoma
Arizona
New Mexico
Arkansas
S. Carolina
Alabama
Georgia
Mississippi
Texas
Louisiana
Florida
Hawaii

Fig. 2—States with AFDC-UF programs in 1975

CONDITIONS OF PARTICIPATION IN AFDC-UF

Table 1 summarizes the eligibility requirements and benefits available under UF. To a degree, UF is very similar to FG: Both programs serve low-income, low-asset families with children; both use the same AFDC benefit schedules, which differ from state to state; and both automatically make families eligible for Food Stamps and Medicaid. UF and FG differ crucially, however, in their eligibility requirements pertaining to family heads.

Husband's Requirements

Federal regulations require that a UF family head—a husband[1]—have a work history of steady attachment to the labor force. He must have worked in 6 of the 13 calendar quarters prior to application for welfare,[2] or have qualified for or received unemployment insurance benefits. "Worked" means that he earned at least $50 during the quarter, a requirement easily met by most. Further, he must have been unemployed for at least 30 days before applying for welfare. (He may apply prior to that time, but may not receive aid until the time limit is met.) The UF program defines unemployment as working no more than 100 hours per month. This differs from the usual Bureau of Labor Statistics definition, which counts a person as unemployed if he is not at work (either jobless or on temporary layoff) and has actively sought a job within the previous month.

After enrolling in UF, the husband still must not work more than 100 hours per month—the so-called 100-hour rule. He may exceed 100 hours in some months, but not regularly. The intent of the rule appears to be to target UF on the jobless and underemployed, but it limits the range of jobs that can be held while on welfare (see Sec. III).

Income Test

Each state establishes a standard of need that varies by family size. To be eligible for UF, the family's income must be less than its standard of need, which is also a determinant of the state's AFDC benefit schedule. Some states pay families the full standard, while others pay only some fraction, say 80 percent. The maximum amount the state is willing to pay to a family of given size is termed the "standard of assistance."

As Table 1 shows, family income is "counted" (i.e., determined) differently in judging initial eligibility and in recertification of eligibility. The result is that, once it has become eligible for UF, a family is allowed to earn more money while still receiving benefits than it is allowed to earn at initial eligibility. This is not a fluke, but is intended to promote work effort among AFDC beneficiaries.

Some argue that welfare participation would increase if the initial income test were liberalized to be the same as subsequent tests. This argument is questionable. Using the formulas in Table 1, let Y_e be the monthly earnings of a family initially

---

[1] The Westcott decision of the U.S. Supreme Court in 1979 ruled that mothers who are the principal wage earners are also eligible for benefits under the program. (See Sec. VI.)

[2] This applied as of 1975, the year to which the data in this study refer. The current regulation states that the husband must have worked in 6 of the 17 calendar quarters prior to application, and so is less restrictive.

Table 1

AFDC-UF PROGRAM ELIGIBILITY CRITERIA AND BENEFITS, 1975

I. Eligibility Requirements

1. Family must be husband-and-wife family with children under 18 years, or under 21 years if attending school.
2. Husband must:
    - o Be "unemployed"--work less than 100 hours per month;
    - o Have worked at least 6 of 13 calendar quarters prior to welfare application, or have been eligible for or received unemployment insurance benefits during the 13-quarter period;
    - o Have worked less than 100 hours during the 30 days prior to application;
    - o Register with the state employment office and the Work Incentive Program (WIN);
    - o Be able to work and not refuse an offer of employment or training without good cause.
3. Income test
    - o Countable income must be less than the standard of need defined by the state.
    - o For determining initial eligibility, countable income (monthly basis) equals earned plus unearned income less deductions:

$$Y_c = (Y_e - D_e) + (Y_u - D_u)$$

    - o For recertification of eligibility, countable income (monthly basis) equals two-thirds of earned income minus $30, minus allowable deductions for work expenses, plus unearned income less deductions:

$$Y_c = [.67(Y_e - 30) - D_e] + (Y_u - D_u)$$

    - o Income received unexpectedly or irregularly is not counted.
    - o Deductions for work expenses include local, state, and federal taxes on earnings, union dues (if mandatory), contributions to pension funds, Social Security, and other mandatory payroll deductions.
4. Assets test
    - o Real and personal property must not exceed a federal maximum value of $2000 per AFDC recipient.
    - o Many household furnishings and appliances are typically excluded.
    - o Many states exclude the home from countable assets.
    - o States establish their own asset tests.
5. Strikers: States may, at their discretion, permit otherwise eligible workers on strike to participate in AFDC-UF.

II. Benefits

1. AFDC benefit schedules vary by state. A family's AFDC benefits depend on the difference between the state's needs standard and the family's countable income; however, the formula for computing AFDC benefits varies by state.
2. AFDC families are automatically eligible for:
    - o Medicaid;
    - o Training and rehabilitation through WIN (if offered);
    - o Other social services (day care; family planning; ways to improve housing and money management; utilization of other community services such as health and legal services);
    - o Emergency assistance.
3. Food Stamps
    - o Until 1978 AFDC families were automatically eligible for Food Stamps; they must now apply for them.
    - o The purchase requirement was eliminated in 1978.

applying for AFDC. The formulas imply that a family being recertified can earn $3/2Y_e + 30$ and have exactly the same level of countable income as the new applicant. If the new applicant earns $100 per month and qualifies for aid, the already qualified participant can earn $180. To the extent that a family recognizes the initial determination of eligibility as being merely a transitory pinch on earnings and income, it has an incentive either to work less or underreport earnings during the period of applying for welfare. *If families are already aware of and respond to this incentive, then liberalizing the initial test will have little effect on family participation in UF. The same point holds for FG.*

Assets Test

Each state also establishes limits on the kind and amount of household assets, as a condition of eligibility. Many states permit home ownership without any ceiling on home value.[3] Clothes and common household furnishings are excluded from the count of real property. All states permit ownership of an automobile, although some states place a ceiling on its value. The more common forms of family wealth that enter into the assets test include cash, savings, the cash value of an insurance policy, bonds, stocks, and certain land holdings. Many states specify that countable assets in excess of the state limit be liquidated before the family receives assistance, or be liquidated during a specified time while the family receives assistance. Some states permit a family to hold income-yielding property so long as the level of income is judged to be "reasonable" relative to the value of the property; such property income is counted in determining the family's AFDC benefit.

States use various methods for valuing assets. Some states rely on "market value"—meaning what an asset could be sold for, as estimated by a caseworker or, in special cases, by an outside appraiser. Other states consider equity—the difference between market value and encumbrances. Caseworker judgment as to which assets are countable and what they are worth may be crucial in determining whether a family passes the assets test.

UF BENEFITS

AFDC benefit schedules are defined by the states. The schedules specify the amount of aid a family could receive if its countable income were zero. A family's actual AFDC payment equals the difference between the state's standard of assistance and the family's countable income. Benefit schedules typically rise with family size, are independent of family assets, and do not depend on children's ages. The latter contrasts to Britain's benefit schedules, which strive for "equivalency" in benefit payments: A 1-year-old may be counted as, say, one-third of an 18-year-old. Some states (e.g., Michigan) adjust their benefit schedule for differences in living costs within the state, but the majority of states do not.

Figure 3 depicts the dispersion of AFDC *benefit schedules* across states. The states are ranked in order of decreasing generosity, without adjustment for cost of

---

[3] In 1975 the following 13 states specified a limit on home value: Alabama, Arizona, Arkansas, California, Connecticut, Kansas, Minnesota, Mississippi, Missouri, Montana, Oklahoma, Tennessee, and Texas. For further detail on assets tests, see U.S. DHEW (1976).

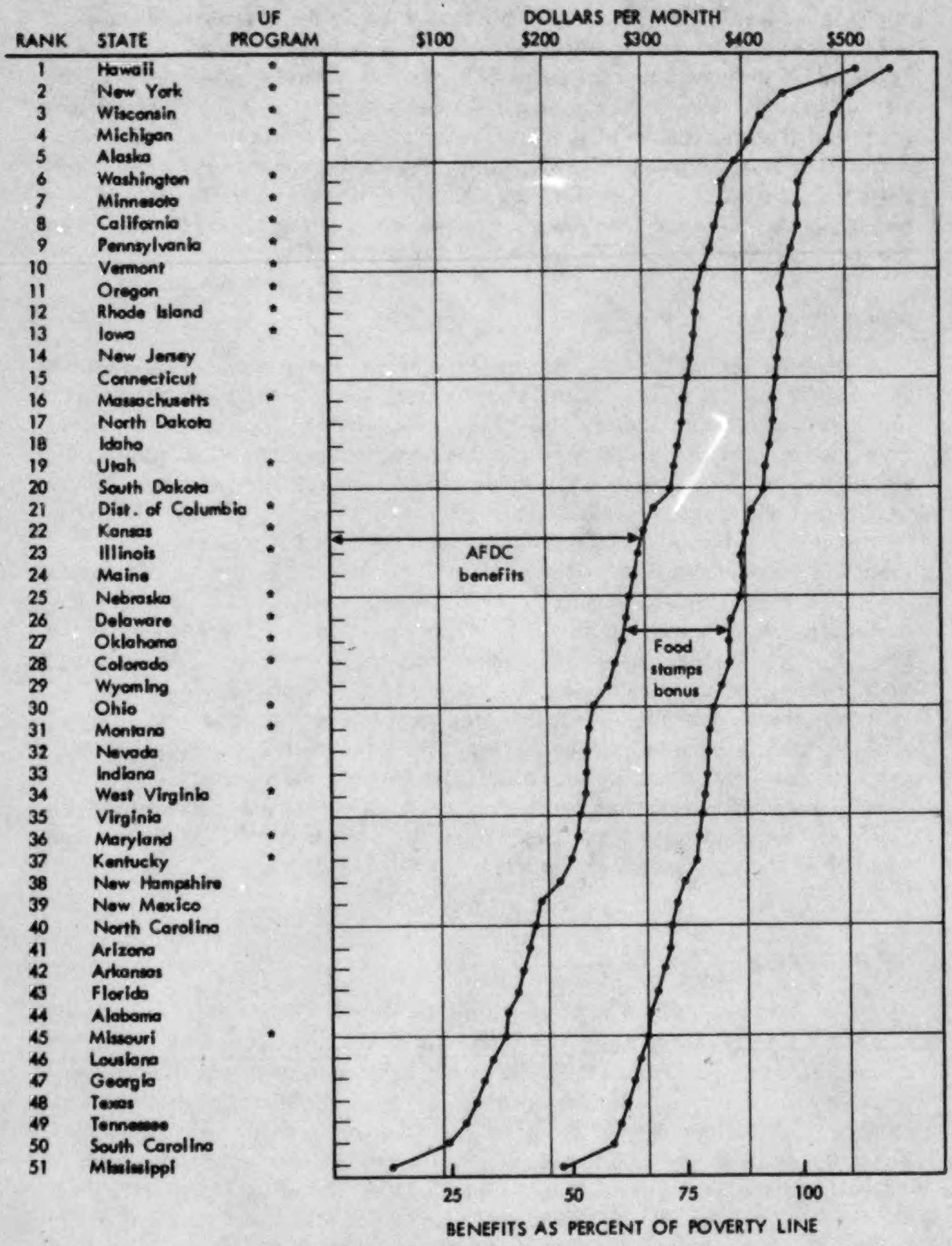

Fig. 3—AFDC monthly benfit schedule including food stamp bonus, four person family, 1975

living differences (because state-level indexes are not available). Because states with lower benefit levels probably have lower costs of living, the figure may exaggerate interstate differences in benefits. UF states (indicated by an asterisk) generally have higher benefits than non-UF states, though the benefit ranges of these two groups of states do overlap. The bottom row of Fig. 3 provides a benchmark of income adequacy, the poverty line. In 1975 the poverty line for a male-headed family of four, with two children, was $5500 per year or $458.33 per month. About one-fifth of the states had AFDC benefit schedules below 50 percent of the poverty line, three-fifths between 50 and 75 percent, and one-fifth above 75 percent.

Interstate dispersion in benefit schedules narrows significantly when Food Stamps enter the comparison. All families on AFDC were categorically eligible for Food Stamps until a legislative change in 1978, which now requires that AFDC families apply for Food Stamps. The cost of the Food Stamp program is borne by the federal government. The AFDC program, in juxtaposition, draws funds from states as well as the federal government. If a state follows federal guidelines in the operation of its AFDC program, the federal government shares the cost of the program. In states having a high level of benefits, the federal government pays 50 percent of the cost; in states with lower benefits, the federal share rises to 65 percent. One may infer from Fig. 3 that the Food Stamp program in effect offers further federal subsidization of state AFDC program benefits. That is not to minimize the contribution of the Food Stamp program in its own right, for it serves many persons not on welfare.[4]

The Food Stamp bonus shown in Fig. 3 approximates the net benefit a family could derive from participating in the Food Stamp program given participation in AFDC. The bonus equals the difference between a family's monthly allotment and its purchase requirement. (Appendix A describes our method of computing the bonus.) However, the 1978 legislation deleted the purchase requirement; families may now obtain Food Stamps equal in value to the bonus, without any cash outlay. The purchase requirement—the amount of money the family had to pay to purchase its allotment of food coupons—rose with family income. As a result, in states with higher AFDC benefits the Food Stamp bonus was smaller, and that helped diminish interstate differences in AFDC benefit schedules. The same result is true of the current Food Stamp program.

The bonus only approximates the net value of Food Stamps because they are an in-kind benefit. Families may view Food Stamps as worth less than their redeemable value in food if they normally would not want to spend that much money on food in a given month (not including restaurant meals). For example, the Food Stamp allotment for a family of four in 1976 was $166 (an average of $38.60 per week). If the family preferred to buy less food, then it can be shown theoretically (R. Smith, 1979) that the family would value the allotment at less than $166. If the family preferred to spend more, they would value the allotment as though it were cash.

An AFDC family is eligible for other benefits not shown in Fig. 3. These include Medicaid, training and rehabilitation through the Work Incentive program, social services, and emergency assistance. We consider Medicaid the most serious omission from Fig. 3, but, as with each of these benefits, there are tremendous difficulties in assigning a valuation. Medicaid, for example, would appear to be a broad-coverage health insurance policy having a zero deductible and zero coinsurance rate, implying that a family would have no out-of-pocket expenses for a medical visit. But Medicaid does not guarantee ready access to high-quality care. Similarly, it is possible that training programs offered by WIN are not cost-effective, or simply are too far away to attend. The value of social services also depends on their availability and quality. One social service, day care, is often provided to working mothers on FG, but may be less important to UF families (which have two parents).

---

[4] In March 1978, 16.6 million persons participated in the Food Stamp program, of whom 7.8 million were on public assistance. The average Food Stamp bonus was $27.05 per person. For details see U.S. Department of Agriculture (1978).

Unemployment Insurance Benefits

A major alternative source of aid to unemployed fathers is the unemployment insurance (UI) program. As with UF, UI programs are administered by states subject to federal guidelines. Figure 4 depicts UI benefit schedules by state. The UI benefit shown equals the monthly amount in 1975 for an unemployed person (here assumed to be the husband) who would earn $6 an hour when employed, which lies well within the hourly wage range of many husbands who participate in UF.

The UI program differs sharply from UF. To be eligible for UI benefits a person must work in a covered occupation for at least some minimum period of time. The level and duration of UI benefits depend on one's wage and duration of employment. In most states the maximum duration of benefits is 26 weeks; qualifying for the maximum may require working in 52 of the 104 weeks prior to applying for UI. Under adverse local and national economic conditions, federal support currently can extend the maximum to 52 weeks. UI weekly benefits are typically 50 to 60 percent of one's weekly wage up to a benefit ceiling. However, Fig. 4 translates the benefits to a monthly basis for comparability with UF benefits. Because UI benefits are not taxed, they are virtually equal to a higher percentage of weekly earnings and are directly comparable with UF benefits (Fig. 3). In 1975 a wage of $6 an hour was high enough to place one at the UI benefit ceiling in 48 states (in most of which the ceiling had already been reached at $5 an hour). There is no assets test for UI; with rare exceptions the UI benefit level does not vary with family size; and work is permitted on UI but earnings net of deductions are taxed away at a rate of 50 percent. That is, each dollar of net earnings causes a 50-cent reduction in UI benefit payments, somewhat less than the 67-cent reduction that would occur under AFDC. The UI program requires a beneficiary to register with the state employment service, be able to work, and not refuse an offer of employment without good cause.

Although we have not studied the issue empirically, many UI beneficiaries are probably eligible for Food Stamps. But eligibility for Food Stamps is not automatic, nor is eligibility for other programs such as Medicaid. A close examination of Figs. 3 and 4 reveals that UI benefits for a person earning $6 an hour are about equal to AFDC benefits plus the Food Stamp bonus. If one is willing to add the appropriate Food Stamp bonus to UI benefits, as we do throughout the remainder of the report,[5] the sum of benefits under UI exceeds the sum of benefits under UF, in every state, for a family of four. But in general that will not be true; instead, benefits

---

[5] Hereafter, we use the term "UF benefits" to mean AFDC benefits plus the Food Stamp bonus, and "UI benefits" to mean UI benefits per se plus the Food Stamp bonus.

RANK	STATE	UF PROGRAM
1	Dist. of Columbia	*
2	Connecticut	
3	Massachusetts	*
4	Pennsylvania	*
5	Wisconsin	*
6	West Virginia	*
7	Alaska	
8	Hawaii	*
9	Ohio	*
10	Colorado	*
11	Rhode Island	*
12	New York	*
13	Utah	*
14	North Carolina	
15	New Jersey	
16	California	*
17	Maryland	*
18	South Carolina	
19	Oregon	*
20	Illinois	*
21	Virginia	
22	Michigan	*
23	Washington	*
24	Vermont	*
25	Nevada	
26	Minnesota	*
27	Delaware	*
28	Arkansas	
29	Idaho	
30	New Hampshire	
31	Louisiana	
32	Iowa	*
33	Indiana	
34	Kansas	*
35	Oklahoma	*
36	Arizona	
37	Alabama	
38	Nebraska	*
39	Kentucky	*
40	Florida	
41	Wyoming	
42	North Dakota	
43	New Mexico	
44	Tennessee	
45	Georgia	
46	Montana	*
47	Maine	
48	South Dakota	
49	Missouri	*
50	Texas	
51	Mississippi	

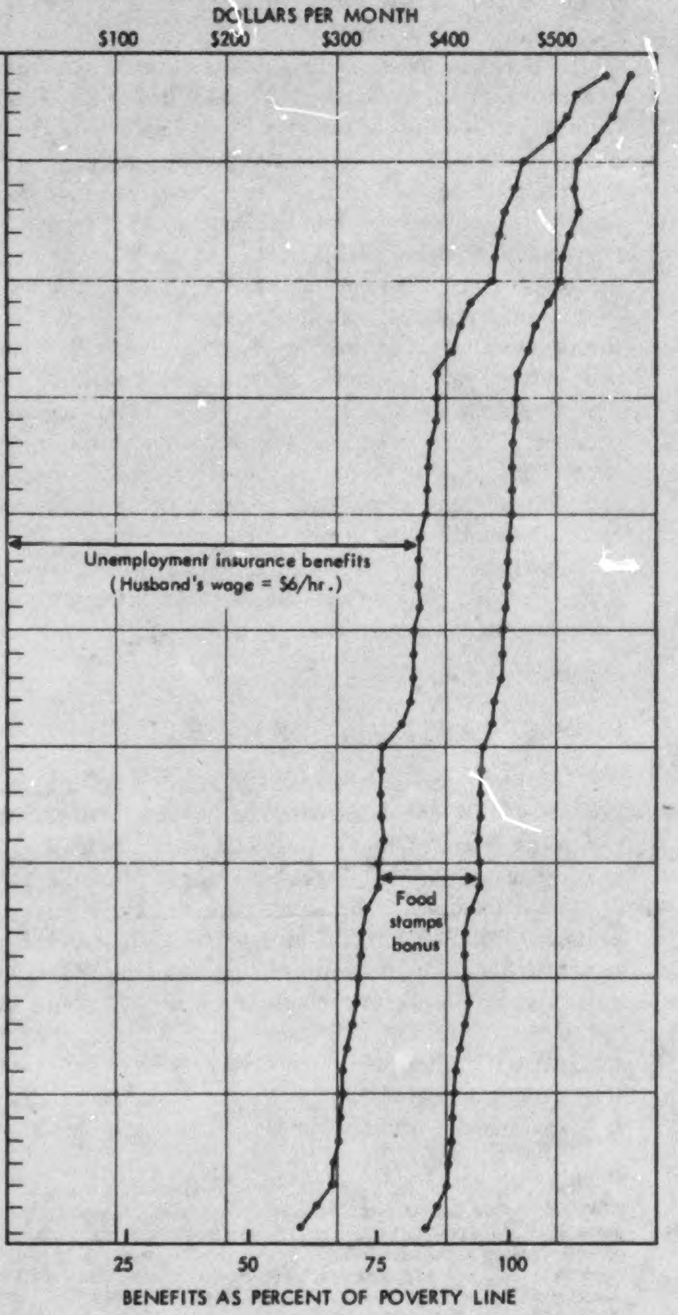

Fig. 4—Unemployment insurance benefit schedule including food stamp bonus, four person family, 1975

under UF will tend to exceed benefits under UI for lower-wage, larger families, a fact documented in App. B.

UI benefits vary less among states than do UF benefits. As before, the extent of variation diminishes with the addition of the Food Stamp bonus. Given the bonus, all states have UI benefits above 75 percent of the poverty line, and two-fifths of the states stand above the 100 percent mark.

While UI can be described an alternative to UF, joint participation in the two programs is not now prohibited. Prior to 1975 many UF states did not permit UF participants to receive UI benefits, but the situation ended when the U.S. Supreme Court ruled on the case of *Philbrook* v. *Glodgett* in June 1975. The ruling stipulates that an individual who is jointly eligible for UF and UI may elect to participate in the program of his choice. The decision overturned the prevalent administrative procedures by which jointly eligible persons were compelled to participate in UI first, then upon exhausting their UI benefits participate in UF. In part because the Glodgett decision contained implications for UI and UF financing,[6] it spawned legislation aimed at resolving those problems. The legislation, known as the Corman Amendment, allows joint participation but stipulates that fathers eligible for both UI and UF must enroll in UI, then may enroll in UF in those cases where AFDC benefits under UF exceed unemployment insurance payments. To our knowledge, there has been no rigorous analysis of the effect of the Glodgett decision and the subsequent Corman Amendment on the size of the UF caseload.[7]

AFDC-UF PARTICIPATION RATES

This section concludes with a glimpse at existing estimates of family participation rates in UF and a discussion of the concept of participation used in the remainder of the report. Whereas previous work has utilized the notion of participation conditional on eligibility, we study unconditional participation.

Table 2 presents UF monthly conditional participation rates as computed by Boland (1973), Rein (1972), Lidman (1975), and Hollenbeck (1975). A monthly conditional participation rate represents the fraction of families eligible for UF in a given month who choose to participate in UF in that month. The estimates in Table 2 fall within the range of 15 to 30 percent, with the simple average being 22 percent. As the authors of these studies recognize, the computed rates are meant to be suggestive rather than definitive, for the base population—families supposedly eligible for UF—can be only crudely identified with available data. Lidman and Boland, for

---

[6] The Glodgett decision in effect changed the source of revenue used to pay benefits. Prior to Glodgett, a federal regulation prohibited the joint receipt of AFDC and unemployment insurance benefits in the same week. As a result of the decision, persons affected by Glodgett who chose to enroll in UF would have their support paid from AFDC funds, thereby creating an added drain on the federal, state, and, in some cases, local revenues used to finance AFDC. By the same token, outlays from UI funds were expected to decrease. Incidentally, we have been told by welfare administrators that some states were lax in enforcing the federal regulation prohibiting joint receipt of benefits. At least one state, California, positively allowed joint participation in UI and UF, and in those cases drew no federal subsidy but paid the AFDC benefits entirely from state and local government funds.

[7] The UF caseload has the following pattern from 1973-1978 inclusive (in thousands): 102, 86, 112, 146, 145, 120. The increase from 112 to 146 occurred during the year immediately after the Glodgett decision. There was a decrease in the unemployment rate for married men, wife present at that time, which by itself would have caused a decline in UF caseload. Thus, much of the 34,000 case increase may be attributable to Glodgett and the Corman Amendment. (Unemployment rates for married men, wife present, are as follows for 1973-1978: 2.3, 2.7, 5.1, 4.2, 3.6, 2.9. U.S. Bureau of the Census (1978), p. 408.)

Table 2

SUMMARY OF AFDC-UF CASELOAD AND PARTICIPATION RATE ESTIMATES

Author	Year	Estimated Eligible Families	Caseload	Monthly Participation Rate (Percent)
Boland	1967	282,000	66,000	23.4
	1970	523,000	153,000	29.3
Rein	1969	391,000	80,700	20.6
Lidman	1969	1,150,000	173,000	15.0
Hollenbeck	1973	n.a.[a]	n.a.	21.1

NOTE: See Bibliography for articles by the authors cited above.

[a] n.a. = not available; numbers are not reported in the study.

example, employ the Current Population Survey (CPS). These data exclude family assets, prior work history, and monthly earned and nonearned income, yet all of these variables should enter in the determination of eligibility.[8] As a result, the CPS count of eligible families may be grossly imprecise—a fault of the data, not the authors. The estimates of the conditional participation rate may be equally imprecise.

The prominence accorded the UF conditional participation rate could be a case of misplaced emphasis. Two events must occur in order for a family to participate in UF: It must be eligible and it must choose to participate, given eligibility. If ideal data were available, it would be useful to study the effect of changes in UF parameters (benefit level, eligibility requirements) on both of these events separately, whereas only the latter event—participation, given eligibility—is reflected in the participation rates shown in Table 2.

In contrast to these rates, the empirical work in this report focuses on the unconditional probability of family participation in UF. This probability—the product of the probability of eligibility and the probability of participation given eligibility—reflects decisions relevant to both events. There are two reasons for our approach: (1) Available data cannot accurately define whether a family is eligible in a given month; and (2) studying only participation given eligibility could yield biased estimates of the effects of explanatory variables on participation in UF, whereas such biases are avoided by studying the unconditional probability.

The biases result from the fact that the pool of eligibles constitute a "selected" or nonrandom sample,[9] the characteristics of which depend on the eligibility criteria and families' responses to them. Focusing only on conditional participation would be justifiable if eligibility were truly exogenous to the family. In that case, once the pool of eligibles has been identified, the conditional participation rate summarizes the portion of the participation decision wholly within the control of the family. Unfortunately, this view ignores the consequences of family actions affecting the likelihood of eligibility. Over time a family can modify its consumption, savings, labor supply, asset portfolio, and training decisions so as to increase or decrease the chance of being eligible for an income support program. The terms of support programs can themselves cause behavioral response, a hypothesis that underlies the concept of social experimentation, for example. Changes in other factors not immediately associated with income support programs can also cause changes in family behavior; a few such candidates include higher market wages, lower unemployment, change in personal health or health of other family members, change in the cost of and returns to schooling, and change in earnings prospects elsewhere, which might induce migration.[10] Even in the short run, a family has some control over its eligibility: A husband could, if he wished, become unemployed and the family could divest itself of liquid and semiliquid assets above the AFDC assets limit.[11]

---

[8] The CPS does allow identification of married, spouse-present families with children and indicates whether the husband was (a) ever unemployed (jobless) in the survey reference year, or (b) unemployed in the survey week, or (c) involuntarily working part-time (less than 35 hours) in the survey week.

[9] Heckman (1979).

Finally, an appropriate base population for studying the unconditional probability is the set of all married, spouse-present families; with one or more children younger than age 21; and with a husband less than 65 years old, able to work, and not in the military or an institution. There are no restrictions on family income or assets. The base population could be made still broader if changes in marital status were entered into the analysis, but we are limited by the cross-sectional nature of our data.

---

[10] One example of family response may be seen in the growth of the FG caseload, which tripled from 1965 to 1975. That growth reflected an increase in participation among eligibles as well as a massive increase in the number of eligibles. Causes for the increase in eligibles go beyond the larger cohorts of the baby boom and include a broadening of program coverage, higher divorce rates, increased teenage pregnancies, a growing awareness of the availability of FG benefits, and perhaps a decline in welfare stigma among female-headed families.

[11] To emphasize the role of family decisionmaking with respect to eligibility is not to eradicate the role of variables outside family control. Changes in eligibility criteria will alter the size of the eligible population. Unexpected unemployment or low earnings can do the same.

II. RESEARCH METHODOLOGY

This research empirically evaluates the effects of variables determining family participation in UF, and then uses that information to predict changes in UF caseload and cost resulting from selected policy options. The research being inherently complex, involving four major topics and four different data sets, guidance to the structure of the research is essential.

Figure 5 is a schematic representation of the research structure and the usage of the data sets. The research topics include an evaluation of the 100-hour rule (Sec. III); estimation of models of family participation in UF (Sec. IV) and UF caseload (Sec. V); use of the models to assess alternative UF policies—mandating UF to non-UF states and imposing UF benefit floors (Sec. VI); and comparison of UF policy projections with those for negative income tax programs (Sec. VII). The data include a Rand survey of UF families, the Current Population Survey, the Survey of Income and Education, and a cross-state data base compiled at Rand.

The section on the 100-hour rule more or less stands alone. Section III argues that eliminating the rule would increase the number of families participating in UF. The increase may be small, however, because families would still have to abide by the income test, which, like the 100-hour rule, also serves to constrain family earnings on UF. Section III then proceeds to compute the percentage of UF families that now appear to be affected by the 100-hour rule. (Computations are based on wage data from the Rand survey of UF families.) Unfortunately, the effect on UF participation of eliminating the rule cannot be determined because the 100-hour rule is constant across states: no variation, hence no estimate. Sections IV and V, in contrast, do present estimates of the effects of variables on family participation in UF.

Section IV reports on an analysis of family participation in UF completed in an earlier phase of research (Hosek, 1978). That analysis draws upon two data bases, the 1976 Current Population Survey (CPS) and a 1977 Rand survey of UF families. The Rand survey was compelled by a lack of suitable data on UF families in existing samples. The CPS, for instance, contains observations on low-income families receiving income assistance, but the families cannot be unambiguously identified as UF. Because the UF program is so small, misidentifying UF families might easily yield participation equations that are off by a factor of two or three in their predictions. Clear identification of UF families is therefore vital in this research.

To obtain a satisfactory data base we utilized the notion of choice-based sampling (Hosek, 1979). Choice-based samples are constructed by sampling units on the basis of the choices they have made—here, the choice is to participate in UF or not to participate. The Rand survey provided observations on UF families and the CPS on non-UF families. Our choice-based sample, designed to have a far higher proportion of UF families than occurs in the population,[1] succeeded in procuring sufficient observations for multivariate analysis of the participation decision.

[1] In UF states less than 1 percent of married, spouse-present families with children are on UF in any month. In contrast, the combined Rand-CPS sample consists of over 30-percent UF families.

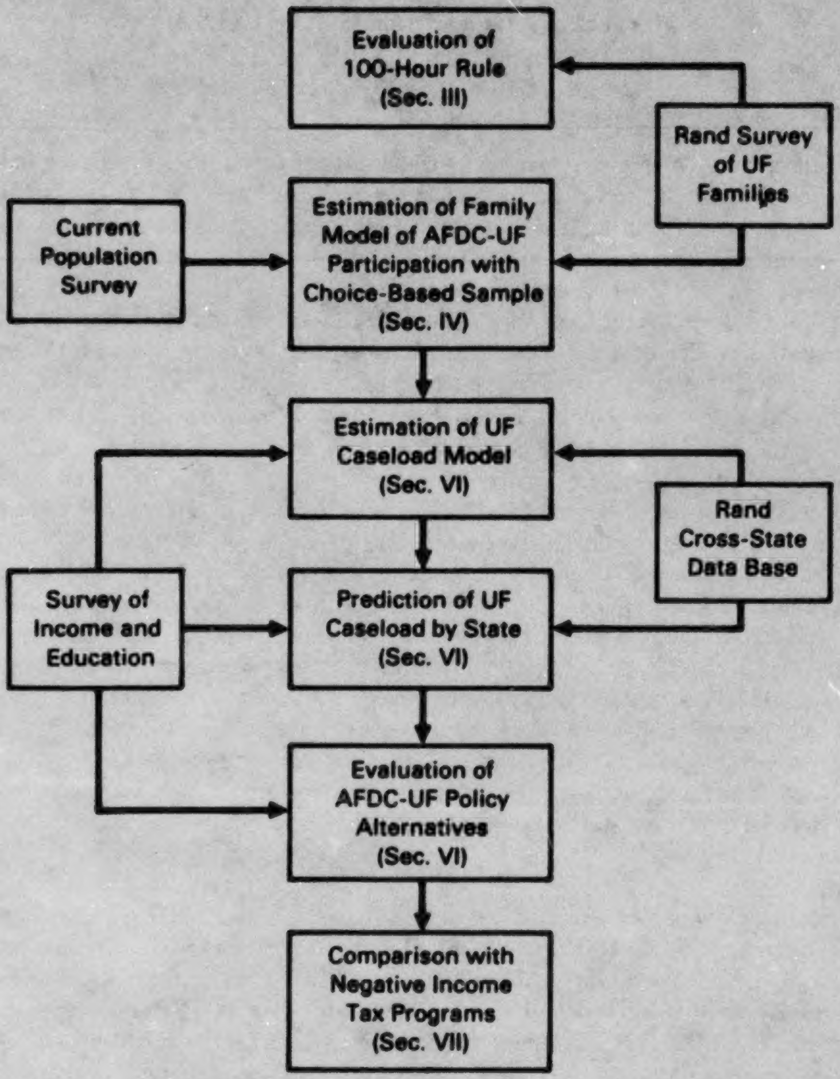
Evaluation of
100-Hour Rule
(Sec. III)
Rand Survey
of UF
Families
Current
Population
Survey
Estimation of Family
Model of AFDC-UF
Participation with
Choice-Based Sample
(Sec. IV)
Estimation of UF
Caseload Model
(Sec. VI)
Rand
Cross-State
Data Base
Survey of
Income and
Education
Prediction of UF
Caseload by State
(Sec. VI)
Evaluation of
AFDC-UF Policy
Alternatives
(Sec. VI)
Comparison with
Negative Income
Tax Programs
(Sec. VII)

Fig. 5—Research tasks and supporting data bases

The Rand survey of 671 UF families centered on three metropolitan sites: Chicago, Detroit, and Los Angeles. Survey procedures and the survey instrument were designed in keeping with those of the CPS. When ready, the Rand survey data were merged with CPS data selected from the same three locations. The 1269 CPS observations satisfied the following criteria: married, spouse present; one or more children less than 21 years old and still present in the family; husband less than 65 years old, able to work, not in the military or an institution; and the family received no welfare income.

We estimated equations explaining the probability of family participation in UF with the choice-based sample data. To do so, we employed a newly developed statistical technique to correct for the nonrandomness in the distribution of sample units (families).[2] These equations include UF benefits potentially available to a family; variables related to the family's earning capacity (husband's wage rate, husband's and wife's education, wife's age, presence of younger or older children); and UI benefits potentially available to the family. The equations were run on the entire sample (after stratifying by ethnic group). This accords with the intention of analyzing the unconditional probability of family participation in UF. We did not follow the conventional, presumably biasing, procedure of first attempting to identify eligible families, then estimating the probability of participation conditional on eligibility.

Our use of data from only three sites presents a problem. The coefficients of certain site-varying variables cannot be measured because only three points are available from which to measure their effects.[3] In an attempt to remedy this problem (Sec. V), we first use equations based on the choice-based sample data to predict the UF caseload in each UF state. These predictions rely on observations from the 1976 Survey of Income and Education, a larger sample than the CPS but in many ways similar.[4] The (log of) predicted UF caseload then enters as an explanatory variable in a regression having the (log of) actual UF caseload as its dependent variable. This regressson, estimated with data from states operating UF programs in 1975, is our vehicle for introducing site-varying variables. The latter include the unemployment rate, the percent of the population residing in a metropolitan area, the error rate of AFDC case disposition (a measure of administrative efficiency), the AFDC eligibility limit on liquid and semiliquid assets, and the number of years the state has had a UF program.[5] The regression yields estimates of the effects of these variables on the UF caseload while holding constant the predicted UF caseload, a variable that takes account of the benefit and demographic variables entering the family probability regression.[6]

In Sec. VI the work on the caseload model and the family participation model culminates in predictions of the changes in UF caseload and cost resulting from several policy options. Distributional effects are also examined. Finally, Sec. VII compares the UF policy predictions with those for negative income tax programs.

---

[2] The technique emerged as part of this research and also was derived independently, and more generally, by Manski and Lerman (1977).

[3] This does not prove to be a severe problem for measuring the UF and UI benefit effects. UF benefit schedules differ nonlinearly by family size across the sites, so variation in benefit level exists beyond that explainable by "site" alone. Also, UI benefit schedules rise at modestly differential rates with respect to the husband's wage rate and have different benefit ceilings across sites and family size.

[4] The Survey of Income and Education could have been used rather than the CPS as a source of observations on non-UF families, but the SIE was not publicly available at the time the choice-based sample was formed.

[5] These and other relevant state-level data are accessible in Antel, Buddin, and Hosek (1979).

[6] We also tested for selectivity bias in the caseload model (App. C). The presence of such bias could destroy the effectiveness of the estimated model as a basis for policy evaluation.

III. THE AFDC-UF HOURS OF WORK REQUIREMENT

The hours-of-work requirement states that a UF father must not be employed more than 100 hours per month.[1] The 100-hour rule, a federal regulation, applies uniformly across UF states. Several AFDC administrators have told us that the 100-hour rule tends to be the binding constraint on family participation in UF—this, rather than the income or assets tests. By implication, if the 100-hour rule were relaxed or eliminated, a policy option now under consideration, the UF caseload would increase because more low-income, working families would qualify for assistance. We argue that the AFDC asset limit is largely irrelevant to assessing the effect of the 100-hour rule, while the AFDC income test is at the heart of the issue.

IRRELEVANCE OF THE ASSETS CONSTRAINT

This discussion focuses on families that have initially qualified for UF assistance, and hence have once met the hours, income, and assets tests. Among these families, the assets test is unlikely to emerge as a binding constraint on eligibility in subsequent periods (months). This follows for several reasons. First, UF families receive windfalls—inheritance, lottery winnings—which would boost their assets above the qualifying limit. Second, although welfare families receive benefits from many sources, including AFDC, Food Stamps, Medicaid, emergency relief, and social services, only AFDC benefits constitute a regular and direct cash payment to the family and so would be available to purchase new assets. Even though exchange of Food Stamps for other than food is prohibited by law, Food Stamps in fact are fungible but are apparently heavily discounted when exchanged on the "black market" because they can ultimately be redeemed only in food and because of their higher transactions cost relative to dollars. Medicaid, social services, and in some cases emergency relief benefits can only be consumed in-kind, as payments for these forms of aid go directly to vendors. Third, beyond AFDC payments the major source of cash income is earnings. Since AFDC payments are made in accordance with perceived needs of a family of given size, and decline as earnings increase, it may be difficult for a family to save any appreciable amount and thereby increase its assets. Finally, it is important to recognize that not all assets are countable when determining whether a family meets the assets test. That is, the asset test itself constitutes an incentive for the family to either consume or invest in noncountable assets (e.g., human capital, children, most household appliances) or to invest surreptitiously in countable assets. There is also the issue of how frequently and carefully a family's assets are audited, although the question of enforcement arises equally with respect to the hours and income tests.

[1] A state's definition of an unemployed father must include any father who is employed less than 100 hours a month, or whose employment exceeds that standard for a particular month only if his work is intermittent and the excess is of a temporary nature as evidenced by the fact that he was under the 100-hour standard for the two prior months and is expected to be under the standard during the next month. Joint Economic Committee (1972), p. 138.

THE HOURS CONSTRAINT VERSUS THE INCOME CONSTRAINT

According to the income test, countable income may not exceed the standard of assistance defined by the states; otherwise the family becomes ineligible for any AFDC benefit. Countable income derives from two sources:[*] (a) unearned income less any deduction permitted by the state up to $5 per month; and (b) earned income as adjusted for deductions and work expenses. States are required to disregard such work expenses as mandatory payroll deductions, transportation, uniforms, and the cost of child care. Moreover, the first $30 of a *family's* monthly earned income and one-third of the monthly income over $30 is exempt. An expression for countable income, Y_C, is:

$$Y_C = [.67(Y_{EH} + Y_{EF} - 30) - D_E] + (Y_U - D_U)$$

where Y_U = unearned income, D_U = deduction for unearned income, Y_E = earned income (H = husband, F = wife), and D_E = deduction for work expenses. Notice that Y_E refers to gross, or pre-tax, pay whereas D_E would include any mandatory pay deductions such as federal and state income tax, F.I.C.A., workmen's compensation and unemployment insurance, and, if mandatory, union dues. Also, it should be understood that the minimum value of each of the terms on the right-hand side is zero.

As countable income rises, the family nears the income constraint. Clearly, countable income is positively related to unearned and earned income and negatively related to the respective deductions. Earned income is the sum of the husband's and wife's earnings. (Children's earnings are not counted if the children are in school and not full-time employees, hence virtually no children's earnings are countable.) Holding the wife's earnings and the husband's wage rate constant, as the husband's earned income rises he must be working more hours so he nears the 100-hour constraint. Thus, whether the family reaches the income constraint before the hours constraint depends on a variety of considerations: unearned income, deductions, wage rates, and labor supply of husband and wife.

It is useful to clarify these relationships in a one-period labor-leisure diagram (Fig. 6). Assume that the family has decided to participate in AFDC-UF; the participation decision could be, but is not, depicted in the diagram. The decision to participate follows from the family's perception that its utility level on welfare exceeds its utility level off welfare. Still, bear in mind that the majority of UF families are on AFDC-UF for less than two years: the reduction in family earnings inducing UF participation is transitory in most cases. Thus, the adequacy of the one-period labor-leisure diagram may be questioned, as it cannot portray the dynamics involved in welfare entry and exit. Further, when the family evaluates the anticipated level of utility of being on welfare, it maximizes utility subject to the budget constraint relevant to AFDC-UF. This constraint includes the various welfare benefits mentioned above and the effective tax rate on family earnings. Two other constraints also apply: (1) The family cannot exceed the income limit, and (2) the husband cannot exceed the hours limit. (There is no constraint on the number of hours the wife works.)

---

[*] "Only such net income and resources as are actually available for current use *on a regular basis* will be considered. . . ." Joint Economic Committee (1972), p. 140.

There are probably numerous reasons why a family might choose to remain on AFDC-UF and adhere to the hours and income constraints. For instance, the father may have a chronic health problem, the recurrence of which may have limited his earnings capacity and reduced his labor supply. Over 28 percent of the UF fathers in our sample reported a health condition limiting the kind or amount of work they could do. About 90 percent of these fathers had their condition for more than a year, the average being over two years. Alternatively, the father may be engaged in job search. As Lippman and McCall (1976) have shown, under certain conditions it is economical for an individual to undertake on-the-job search as opposed to search during unemployment. UF fathers are presumably willing to engage in either kind of search, with the proviso that any intermediate job not pay so much, or require such long hours, as to disqualify the family from further welfare benefits.

Figure 6 applies to a husband in a family of given size and living in a given location. These conditions are sufficient to dictate the income constraint of the family. The hours constraint is of course set at 100 hours. For the purpose of the diagram, if the wife works, her earnings net of deductions are added to net unearned income, if any. The resulting sum equals the family resources apart from the husband's earnings. The diagram is a simplification of reality because it does not depict how the wife's labor supply is determined simultaneously with the

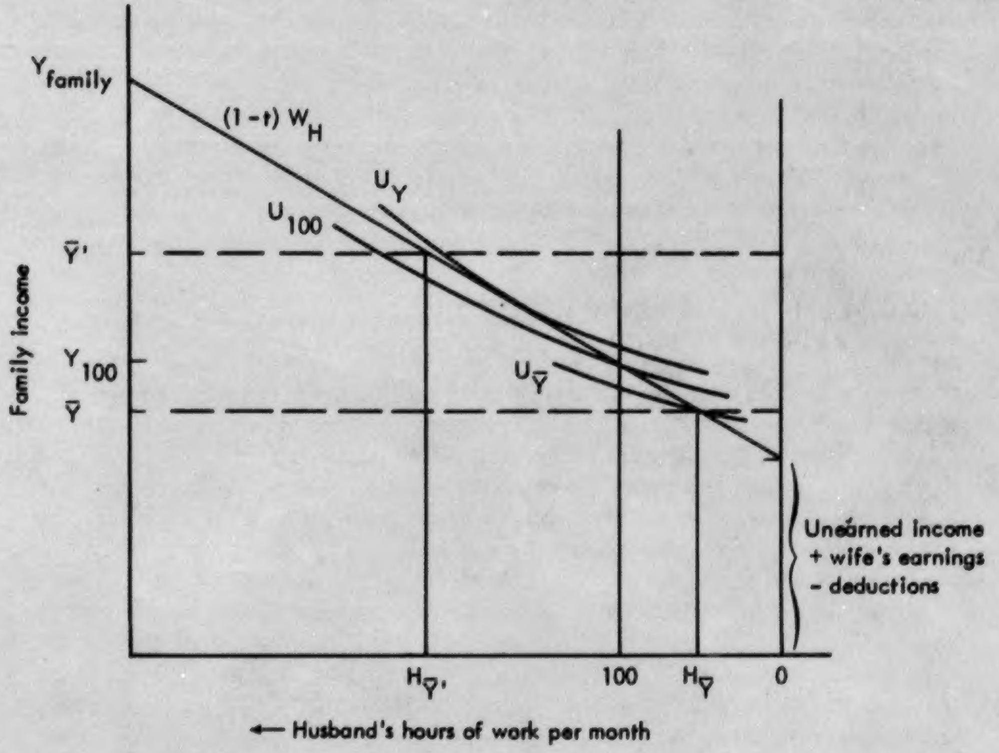

Fig. 6—Income and hours limits may constrain the husband's labor supply on AFDC-UF

husband's labor supply. Approximately 20 percent of families in the UF sample had wives who worked sometime during the survey reference year; the fraction of wives working in a given month is smaller because some women are part-year employees.

Under the conditions of Fig. 6, whether the family is income-constrained versus hours-constrained depends on the shape of the husband's indifference curves. These curves are drawn to intersect the post-tax wage rate from below over the range of family income including $\bar{Y}$ and Y but not including $\bar{Y}'$. This is the interesting case, for if the indifference curve passing through the intersection of $\bar{Y}$ and the wage line had a greater slope than $(1 - t)\ W_H$, the family would be neither income- nor hours-constrained (because preferred hours of work would be less than 100 and family income would be less than $\bar{Y}$).

Accepting Fig. 6 as drawn, if the income constraint $\bar{Y}$ is below the income level Y_{100}, which corresponds to the husband's working 100 hours per month, ceteris paribus, the family is income-constrained. In particular, the husband must work no more than $H_{\bar{Y}}$ hours or the family income will be too large for the family to qualify for welfare benefits, and indeed the family may choose to leave welfare. Alternatively, if the income constraint were $\bar{Y}'$, the family would be hours-constrained. The husband would prefer to work more than 100 hours but is prohibited from doing so by the 100-hour rule.

If the family were hours-constrained and the 100-hour rule were eliminated, then the maximum increase in family income would be $(\bar{Y}' - Y_{100})$ and the maximum increase in the husband's hours would be $(H_{\bar{Y}'} - 100)$. Not all families would choose to achieve these increases, however. In fact, the husband shown would select a smaller increase in hours and income, as reflected by the fact that U_Y becomes tangent to the wage line at an income and hours combination strictly less than $(\bar{Y}', H_{\bar{Y}'})$. Finally, notice that for any given level of the income constraint, the higher the husband's wage the greater the chance that the family will be income-constrained rather than hours-constrained.

A COMMENT ON THE WAGE STRUCTURE OF THE AFDC-UF FATHER

Before describing an empirical procedure for judging the extent to which the hours constraint is potentially binding among UF families, it is relevant to insert an observation on the apparent earning capacity of persons on welfare. When the family faces income and hours constraints, the question arises as to whether the husband, say, has any incentive to accept a wage below his opportunity wage. The answer is straightforward and can easily be confirmed by mental manipulation of the lines in Fig. 6. So long as leisure is a normal good,[3] the husband will always have an incentive to choose a wage equal to his opportunity wage. Acceptance of a lower wage implies more hours of work for the same level of income. Therefore, if the family is income-constrained by $\bar{Y}$ in Fig. 6, the husband prefers to work the smallest number of hours to obtain that income. If the family is hours-constrained, the husband prefers to take the highest available wage, for that yields the greatest income commensurate with a given level (100 hours) of effort.

[3] Meaning that as income rises the husband prefers to work less, other things equal.

Consequently, if an empirical analysis of the wage structure of AFDC-UF fathers were to indicate a lower earnings capacity than for nonwelfare fathers of similar observable characteristics, one should be willing to consider at least two sources of the difference: (1) unobserved variables related to skill, ability, health, language proficiency, and physical or mental handicaps, and (2) the possibility that part-time jobs tend to require fewer skills, and hence pay a lower wage rate, than full-time jobs. The 100-hour rule essentially limits UF fathers to half-time jobs or less. The fathers have no incentive to accept a wage below their opportunity wage, yet so long as the family chooses to remain on welfare, the effect of the hours constraint might be to shrink the father's opportunity wage rates. If the hours constraint were removed, the presence of the income constraint itself might have the same qualitative effect, with the relative strength of the effect depending on whether the family was initially hours- or income-constrained.

WHEN IS THE HOURS CONSTRAINT BINDING?

Two methods can be used to address the question of when the hours constraint is binding; both are approximations and only the first approach is pursued in detail here. That method is to ask whether a family on welfare would ever expect to be hours-constrained rather than income-constrained in a given month. The second method involves an examination of hours-of-work behavior among welfare families and suggests how many families are in fact likely to be hours-constrained.

The first method is straightforward and is based on a comparison of the income limit and countable income were the husband to work 100 hours per month. To get a conservative (i.e., upper-bound) estimate of the fraction of families that would be potentially hours-constrained, assume that unearned income and wife's earnings are both zero. If either of these variables were positive, the fraction of families potentially hours-constrained would decline. (Roughly 15 percent of the UF sample families report some form of unearned income in the survey reference year.)

Under the assumptions that $Y_U = Y_{EF} = 0$ and the husband works 100 hours per month, countable income is

$$Y_C^* = .67\,[100 \cdot W_H - 30] - D_E.$$

The level of deductible work expenses, D_E, will vary across individuals but, because we lack data on D_E, assume a constant level of $50 per month, as suggested by a State of California 1977 survey of UF cases.[4] Let $\bar{Y}$ be the family's income limit, that is, $\bar{Y}$ is the family's standard of assistance under AFDC. Then the family is potentially hours-constrained if $Y_C^* < \bar{Y}$ and potentially income-constrained if $Y_C^* > \bar{Y}$.

One approach to implementing this method is first to solve for the level of the husband's wage that makes $Y^* = \bar{Y}$, say W_H^*. If the husband's wage is actually higher than that level, the family is income-constrained; if it is lower, the family

---

[4] In April 1976, UF cases in Los Angeles reported Y_E = $325 and total disregards = $189 (see Table 167 in the California survey). Total disregards includes $30 plus one-third of Y_E, plus child care, mandatory payroll deductions, transportation, uniforms, and other work expenses. Hence

$$189 = 30 + 1/3\,(325) + D_E \text{ so } D_E \approx 50.$$

is hours-constrained.[5] Given knowledge of W_H^* for each state and family size, computing the fraction of families that are potentially hours-constrained is equivalent to tabulating the percentage of fathers having a wage *less than or equal to* W_H^* for that state and family size. The chief external data requirement, apart from $\bar{Y}$, is information on the father's wage W_H, which can be estimated from our sample of UF families.

Values of W_H^* computed by state and family size appear in Table 3.[6] Two points emerge: (1) As family size rises, the family is more likely to be potentially hours-constrained. (2) Even among small families (two parents, one child), the father's wage must be relatively high before the family is potentially income-constrained. For example, in California the father's wage rate would have to be above $5.80/hour. *By and large, the wage rate of the husband is sufficiently low that, were he to locate an acceptable job, he would reach the 100-hour constraint before he reached the income constraint.* This is strongly reaffirmed in Table 4, which shows the fraction of fathers in our UF sample with a wage less than or equal to W_H^* for a given location and assistance unit size, i.e., the fraction of potentially hours-constrained UF families. Furthermore, with respect to the population of married, spouse-present families in general, Table 9 in Sec. VI tabulates by state the percentage of husbands having a wage rate of less than $6 an hour. This percentage can be compared to the critical wages in Table 3 to obtain a rough indication of the degree to which families in a state are likely to be hours-constrained.

Turning to the second method of determining whether a UF family is hours-constrained, note that the first method is deficient on two counts in regard to a family's actually, not potentially, being constrained by the hours and income requirements. The first method ignores the questions of whether the mother would choose to participate in the labor force, and perhaps more important, whether the father would choose to work 100 or more hours were he not constrained. The second approach, then, is to estimate a family model of labor force participation and hours of work.[7] While this method has genuine appeal in principle, it requires estimation of family labor supply in the absence of, or at alternative levels of, the hours constraint.[8] But estimation is precluded because there is no variation in the constraint across states.

LONGITUDINAL EVIDENCE

Wiseman (1975) studied the monthly probability of a family leaving UF. His

---

[5] The critical wage is defined from the relationship that the family's assistance standard equal the family's countable income when the husband works 100 hours per month:

$$\bar{Y} = .67\,[100 \cdot W_H^* - 30] - D_E$$

or

$$W_H^* = [\bar{Y} + D_E + 20]/67$$

[6] The table ranges over family sizes of three through six, which encompasses the majority of UF families. In Rand's sample, 21.4 percent of the families report one dependent child, 30.8 report two, 21.3 report three, and 11.8 report four. Thus, 85 percent of these families have fewer than five children.

[7] Ideally, the model would also incorporate transitory phenomena such as unemployment of the husband.

[8] It would be misleading to take an "accounting" approach and simply count the number of fathers in various hours-of-work categories. This approach naively assumes that hours of work would be unchanged if the 100-hour rule were eliminated. Worse, it misses entirely the connection between a rules change and a change in the family's willingness to enter (or remain in) UF.

Table 3

"CRITICAL WAGES," BY STATE AND FAMILY SIZE

	Family Size					Family Size			
State	3	4	5	6	State	3	4	5	6
Alabama	3.06	3.58	4.10	4.63	Montana	4.14	4.81	5.47	6.13
Alaska	6.27	7.01	7.76	8.51	Nebraska	4.81	5.43	6.06	6.69
Arizona	3.46	3.99	4.51	5.04	Nevada	4.16	4.78	5.40	6.01
Arkansas	3.45	3.87	4.28	4.70	New Hampshire	3.72	4.34	4.96	5.58
California	5.80	6.70	7.60	8.51	New Jersey	5.46	6.36	7.26	8.16
Colorado	4.45	5.16	5.88	6.60	New Mexico	3.61	4.12	4.63	5.13
Connecticut	5.46	6.25	7.05	7.85	New York	6.69	7.73	8.77	9.81
Delaware	4.54	5.33	6.12	6.91	North Carolina	3.72	4.03	4.34	4.64
D.C.	4.90	5.73	6.56	7.39	North Dakota	5.28	6.22	7.17	8.12
Florida	3.29	3.76	4.23	4.70	Ohio	4.19	4.84	5.48	6.12
Georgia	2.73	3.25	3.78	4.30	Oklahoma	4.53	5.28	6.04	6.79
Hawaii	7.64	8.72	9.79	10.87	Oregon	5.72	6.42	7.11	7.81
Idaho	5.52	6.18	6.84	7.49	Pennsylvania	5.77	6.61	7.46	8.30
Illinois	4.81	5.52	6.24	6.96	Rhode Island	5.63	6.40	7.18	7.96
Indiana	4.03	4.78	5.52	6.27	South Carolina	2.48	2.79	3.10	3.42
Iowa	5.37	6.37	7.38	8.39	South Dakota	5.41	6.01	6.62	7.22
Kansas	4.94	5.61	6.28	6.96	Tennessee	2.76	3.00	3.24	3.48
Kentucky	3.81	4.55	5.30	6.04	Texas	2.73	3.13	3.54	3.94
Louisiana	2.91	3.40	3.90	4.39	Utah	5.14	6.01	6.88	7.76
Maine	4.56	5.48	6.40	7.31	Vermont	5.69	6.48	7.26	8.04
Maryland	4.01	4.66	5.30	5.94	Virginia	4.04	4.70	5.36	6.01
Massachusetts	5.46	6.22	6.99	7.76	Washington	5.93	6.79	7.65	8.51
Michigan	6.32	7.28	8.25	9.21	West Virginia	4.13	4.76	5.40	6.03
Minnesota	5.95	6.79	7.63	8.48	Wisconsin	6.45	7.37	8.30	9.22
Mississippi	1.72	1.94	2.16	2.39	Wyoming	4.63	5.07	5.52	5.97
Missouri	3.06	3.58	4.10	4.63					

NOTE: Table assumes that monthly employment deductions = $50.

data cover 1967 through 1973 and are drawn from actual case histories in Alameda County, California (the Oakland area). In 1967 the hours limit in California was 173 hours per month. It fell to 152 hours in November 1969, to 130 hours in July 1971, and to 100 hours in October 1971. Unfortunately, one cannot measure the effect of these changes alone on UF participation because several other significant administrative changes occurred concurrently. Nevertheless, Wiseman's interpretation of the data is that the hours-limit changes predominated over the other changes and led to a *decline* in the monthly probability of leaving UF. This may mean, Wiseman suggests, that under a more stringent hours limit fewer husbands can find jobs and thereby work their way off welfare.

We should note that Wiseman's explanation contrasts with the approach illustrated in Fig. 6, which implies that an increase in the stringency of the hours requirement should make UF less attractive and so increase the monthly probability of leaving UF and reduce the UF entrance probability. Better data will be

Table 4

PERCENTAGE OF FAMILIES POTENTIALLY CONSTRAINED BY THE 100-HOUR RULE: LOS ANGELES, COOK, AND WAYNE COUNTIES

County	Family Size			
	3	4	5	6+
Los Angeles				
Critical wage ($/hr)	5.43	6.33	7.23	8.13[a]
Potentially constrained (%)				
White	95	90	94	100
Nonwhite	96	100	95	100
Cook (Chicago)				
Critical wage ($/hr)	4.43	5.15	5.87	6.58[a]
Potentially constrained (%)				
White	44	68	92	95
Nonwhite	70	74	80	94
Wayne (Detroit)				
Critical wage ($/hr)	5.95	6.91	7.87	8.84[a]
Potentially constrained (%)				
White	81	90	94	100
Nonwhite	75	87	100	100

[a] The critical wage for a six-person family. Larger families have a higher critical wage.

required before empirical research can discriminate between these hypotheses. In the meantime, Wiseman's results remain a source of speculation. Ignoring the concurrent administrative changes, we infer from his estimates that practically all of the decline in the UF exit probability occurred during the period when the hours limit fell from 173 to 152 hours. Translated into weekly terms, the hours limit fell from 40 hours to 35 hours per week, the verge of full-time employment. There was virtually no change in the exit probability when the hours limit declined from 152 to 100 hours. Taken at face value, the results contain the following policy implication: The hours limit would have to be relaxed to permit full-time work before it would cause an appreciable increase in the rate at which families leave UF. (However, as the next subsection argues, even such a large change in the hours limit may have a nil effect on UF participation in many states.)

A subtle statistical issue is raised by Wiseman's results. It could be that changes in the hours rule and other administrative practices caused a change in the kind of families participating in UF. The model described in this section suggests that tightening the hours rule from 173 to 100 would cause families with relatively good market earnings prospects not to enroll in UF. But "hardcore poverty" families would continue to enroll, gradually leading to an increase in the proportion of the UF caseload consisting of such families. Because these families are inherently less likely to leave UF, the observed UF exit probability would tend to decline over time, even for observationally identical families. This pattern of caseload attrition, consistent with the model presented here, could help account for the reduction in exit probability found by Wiseman and statistically linked with a tighter hours rule.

PROGNOSIS

The question cannot now be settled as to the size of effect on UF caseload if the 100-hour rule were substantially relaxed or eliminated. It is true that few UF families actually have working husbands. Only 10.5 percent of UF families in California in April 1976 reported employment income from *any* family member.[9] The low incidence of employment among UF husbands may be caused by the 100-hour rule, or simply by the inability of many UF husbands to find any suitable job. To the extent that the 100-hour rule depresses employment and earnings opportunities for UF families, it diminishes the family's incentive to participate in UF.

Because we have found that most UF families in our sample are potentially hours-constrained, it may seem logical to assume that any employment and earnings effects accompanying the 100-hour rule should be relevant to many families on the borderline of participating in UF. Yet it is unclear whether even the complete elimination of a limit on the husband's hours of work would have much effect on the family's participation decision, because the family would still be constrained by the income limit.

We expect the effect of the income limit to differ by state. In a family of four, a husband earning $5 an hour could work 146 hours per month in Michigan before reaching the income limit (assuming the family has no other earned or unearned income). Full-time work, defined by the Bureau of Labor Statistics as 35 or more hours per week, corresponds to 152 or more hours per month. In Michigan, then, which is a high-benefit state, the husband could work virtually full time and the family could still receive an AFDC benefit payment (albeit a small one) and remain fully eligible for Food Stamps and Medicaid as well. But in Arizona and other low-benefit states, many of which are not currently UF states,[10] the husband could not work 100 hours per month before reaching the income limit. Thus, whatever its size, the effect of eliminating an hours limit on UF participation would tend to be largest in high-benefit states and small, if not negligible, in low-benefit states, many of which are currently non-UF states.

---

[9] State of California (1976).

[10] Arizona ranked 41st in the level of AFDC benefits for a family of four in 1975 (Fig. 3). All states with lower benefits (except Missouri) were non-UF states, as were the three states immediately above Arizona.

IV. DETERMINANTS OF FAMILY PARTICIPATION IN AFDC-UF

This section discusses the empirical findings of Hosek's 1978 study, which contains a utility maximization model of the family's choice to participate in UF, together with probit regressions on the probability of participation. The model implies that the likelihood of UF participation depends on the family's utility from being on UF, subject to the eligibility requirements and available benefits, versus its utility off UF. On UF the family must satisfy the income test, the assets test, the 100-hour rule, and other requirements listed in Table 1. These constraints are not relevant when the family is off UF, and the family may prefer to work more, earn more, and save more than it could under UF.

The 1978 study examines the relationship between the unconditional probability of participation and four kinds of variables suggested by the model: UF benefits (including the Food Stamp bonus); variables reflecting the husband's earnings capability; variables reflecting the wife's earnings capability; and UI benefits (including the Food Stamp bonus). The model suggests that the chance of UF participation should rise with UF benefits and decline with family earnings capability. Moreover, the chance of participation should decline as UI benefits increase, if families tend to treat UI as a substitute for UF.

In accordance with the 1978 model, the present analysis of family participation in UF is based on family-level data. For our purposes such data are preferable to more aggregate data, for example, data on case openings and case closings. Using family-level data, the family's UF participation status can be related to variables specific to the family. Aggregate data, by comparison, reflect averages across families and could represent decisionmaking processes beyond those pertinent to the family's UF decision.[1] As noted in Sec. II, the family data were drawn from a choice-based sample collected at three sites, the Chicago, Detroit, and Los Angeles metropolitan areas. With only three sites, the effects of variables that vary strictly by site (such as unemployment rate and the AFDC assets limit) cannot be tested, but research described in the next section strives to correct this deficiency.

Given the data, variables for hourly wage and years of school were chosen to reflect the husband's earnings capability. For wives, many of whom do not work and therefore report no hourly wage, age,[2] years of school, and variables indicating the presence of young children (0 to 5 years) and older children (15 to 20 years) were selected. The choice of these variables is common among studies of earnings, labor supply, and human investment (e.g., Mincer 1974 and references therein).[3]

---

[1] To cite one example, the interpretation of the coefficient on average manufacturing wage in a regression explaining UF caseload can differ from the interpretation of the coefficient on the husband's wage rate in a regression explaining family participation in UF. Acknowledging a difference in interpretation does not undercut the possibility that either model, family level or aggregate, provides accurate predictions of UF caseload. The family model, however, can provide more detailed predictions and can be used to investigate distributional aspects of UF policy options; see Sec. VI.

[2] The husband's age was not used because, from a statistical viewpoint, it was virtually the same as the wife's age.

[3] Were data available, other variables also could have been included, for example, health status, years of work experience, stability of employment, special training, foreign-born, difficulty speaking English, and migration experience.

43

The core of the empirical results appears in Table 5, which reports the elasticity of the change of participation with respect to the explanatory variables.[4] As the table indicates, the hypotheses based on the model were confirmed on the whole, with the size and statistical significance of the effects often being larger for white families than for nonwhite families.[5]

Table 5 also shows the means of the explanatory variables, by ethnic group, for families off UF and on UF. The elasticities in Table 5 have been evaluated at the means of the white and nonwhite populations, respectively, but in general the response of a given family depends on the levels of its own explanatory variables, not the population means. As a result, UF benefits response can differ across families and Table 5 is only a guide to how an average family would respond.

A major finding is the high elasticity of UF participation with respect to UF benefits. As seen in Table 5, a 1 percent increase in UF benefits causes a 3.6 percent increase in the white participation probability and a 2.4 percent increase in the nonwhite.[6]

These effects, although statistically significant, can change when other variables are added to the equation. The addition of a variable for the number of children increases (decreases) the size and significance of the white (nonwhite) elasticity (Hosek, 1978). This sensitivity should be borne in mind when interpreting caseload projections (Sec. VI).

As Table 5 shows, UF families tend to be younger, have less education, and have a lower wage rate for the husband than do non-UF families. That is, the kinds of families who participate in UF are those with low earnings capabilities. This pattern is reflected in the effects of these variables on the probability of UF participation: Increases in age, schooling of either spouse, and the husband's wage all reduce the family's likelihood of being on UF. Each effect is significant for whites but only the age effect is significant for nonwhites.

The weaker showing for nonwhites draws our attention back to the table of means. Differences between mean age, education, and wage are pronounced between UF and non-UF white families, but not so for nonwhites. Conceivably, this pattern could be the result of a higher proportion of nonwhites participating in UF than of whites, but since the fractions are so low for both groups this cannot be the explanation. Sample data for Chicago, Detroit, and Los Angeles showed about one percent of white families and three percent of nonwhite families on UF monthly in 1975.

Instead, the likeness between UF and non-UF nonwhite families, as well as the weak effects of the earnings capability variables, may be due to the greater variance of earnings among nonwhites as opposed to whites with the same observed characteristics. One factor to consider is unemployment. The unemployment rate is twice as high for blacks as whites, and studies document a higher incidence and longer duration of unemployment among nonwhites after controlling for age, edu-

[4] The elasticity represents the percentage change in the monthly probability of family participation in UF in response to a 1 percent increase in an explanatory variable.

[5] Defined as blacks, Hispanics, and others.

[6] The UF benefits variable equals the maximum AFDC and Food Stamp benefits available to a family, given its size and location, should the family decide to participate in UF. If the family were to work while on UF, its income including actual benefits paid would be higher than its potential benefits as measured here. But the level of benefits paid would tend to be less than the maximum. Thus our benefit variable should be thought of as a measure of benefit opportunity, or maximum potential benefits, while on UF. Note that a UF benefits variable is computed for each family, whether or not it is on UF.

Table 5
MODEL OF FAMILY PARTICIPATION IN AFDC-UF: MEANS AND ELASTICITIES OF EXPLANATORY VARIABLES, BY UF STATUS AND RACE

Variable	White			Nonwhite		
	Mean		Elasticity	Mean		Elasticity
	Off UF	On UF		Off UF	On UF	
Benefits ($/mo)						
UF	445	502	3.59***	462	502	2.39***
UI	557	524	-2.03*	477	485	-0.84
Husband						
Wage rate ($/hr)	8.63	5.35	-0.70*	5.91	4.87	-0.39
Years of school	13.2	10.6	-3.21***	10.8	10.5	-0.09
Wife						
Age	38.5	32.6	-1.60***	34.7	33.4	-1.95*
Years of School	12.6	10.8	-2.38***	10.6	10.7	-0.47
Presence of children						
0-5 years	0.37	0.60	-0.02	0.57	0.55	-0.38***
15-20 years	0.46	0.24	-0.54***	0.36	0.35	-0.18*
Hispanic/other	---	---	---	0.71	0.31	-1.60***

NOTE: Statistical significance of coefficient on which elasticity is computed:

* = .10
** = .05
*** = .01

cation, wage rate, and, when possible, industry, occupation, and location (Hall, 1972; Hosek, 1975). Viewed over the span of a year, these differences can generate sizeable racial disparities in the chance of ever being unemployed in a given year and, among those unemployed, in the total weeks of unemployment. Consider the estimates in Table 6 for persons aged 25 to 34 with 9 to 11 years of school, and classified into full-year labor force participants (50 or more weeks) and non-full-year participants. (Non-full-year participants include part-year participants as well as persons out of the labor force.) Most men are full-year participants while most women are not, but among unemployed women roughly half are full-year participants. The estimates are based on 1966 data but still offer an accurate indication of racial differences in the extent of unemployment. The estimates for full-year men and part-year women are most relevant to the kinds of families who might participate in UF. Among full-year men, the annual incidence of unemployment is over 70 percent higher for nonwhites: two in seven, as opposed to one in six for white men. Also, the annual duration of unemployment is nearly 50 percent higher for nonwhites: 15 weeks versus 10 weeks. With respect to part-year women, the annual incidence of unemployment is much greater among nonwhites (13.6 percent versus

Table 6

PREDICTED ANNUAL INCIDENCE AND DURATION OF UNEMPLOYMENT, BY RACE AND SEX

Labor Force Participant	White		Nonwhite	
	Men	Women	Men	Women
Full-year				
Annual incidence (percent)	15.9	12.2	27.3	24.2
Annual duration (weeks)	10.6	13.3	15.1	18.7
Non-full-year				
Annual incidence (percent)	6.5	3.6	11.4	13.2
Annual duration (weeks)	5.4	6.4	5.0	6.6

SOURCE: Hosek (1975).

3.6 percent), reflecting more job turnover as well as more entry and exit from the labor force. Differences in annual duration are small, however.

Another factor behind the small size and significance of nonwhite earnings variables concerns their earnings behavior. Evidence on this has been assembled by J. P. Smith (1978), who finds a negative correlation between the earnings of white husbands and their wives but a positive correlation for blacks. Thus, in white families the wife's earnings even out variations in the husband's earnings, so that family income is relatively stable. But in black families the husband and wife are typically both major contributors to family earnings, and the income-stabilizing role of the wife tends to be absent. Given this pattern of behavior,[7] nonwhites may be more likely than whites to seek welfare benefits as a means of maintaining income.

The remaining explanatory variables indicate the presence of younger and older children, whether a nonwhite family is Hispanic or other than black, and the level of UI benefits. The presence of older children who can take care of themselves as well as younger brothers and sisters reduces the family's probability of participating in UF. The home time of the older children may substitute for the wife's, thereby encouraging her participation in the labor force, raising family earnings, and reducing the likelihood of poverty-level family income. The presence of young children has essentially no effect on the UF probability of white families and a strong negative effect for nonwhite families, an unexpected finding that requires further research for clarification. The large and significant negative elasticity associated with the Hispanic/Other variable reveals that their chance of UF participation is below that of blacks: A 1 percent increase in the proportion of Hispanic/Other reduces the probability of participation among nonwhite families by 1.6 percent.

Finally, the negative elasticity on UI benefits (including the Food Stamp bonus) is consistent with the hypothesis that families treat UI as a substitute for UF. The

---

[7] A question for future study is whether the availability of welfare benefits influences the labor supply behavior of nonwelfare recipients.

UI benefits variable measures the maximum potential UI benefits and Food Stamp bonus available to a family, given the husband's wage rate, family size, and location (state of residence). The UI benefits variable is not statistically significant for nonwhites because many nonwhite husbands have a wage rate leading to UI benefits below the UI benefit ceiling and approximately equal to a constant fraction (about 50 percent) of their wage. Even with the Food Stamp bonus added, the UI benefit variable then becomes more colinear with the wage. This problem does not arise for whites, whose higher wage rates place many families at the UI benefit ceiling. (When the UI benefits variable is deleted from the equation, the wage rate effect strengthens to the point of statistical significance for nonwhites as well as whites.)

V. DETERMINANTS OF AFDC-UF CASELOAD

IMPORTANCE OF SITE EFFECTS

With data from only three sites, the analysis of family participation in UF could not adequately control for site-specific variables thought to be relevant to the family's choice to participate in UF. The same kind of problem arises whenever the number of sites is small, as with the social experiments now under way on income maintenance, health insurance, and housing allowance. There are two specific aspects to consider: (1) The inability to include variables that properly belong in a model may cause an omitted-variable bias in the coefficients that are estimated, and (2) the inability to estimate the coefficients of the omitted variables themselves may diminish the predictive capability of the model when applied to areas outside the survey sites. Both aspects, addressed in this section, are pertinent to improving the model's capability for policy evaluation.

METHODOLOGY

Variation in site variables can be derived from the 27 states having UF programs in 1975. To make use of this information, we specify a model similar to those used in the analysis of residuals. For each UF state, the actual UF caseload is related to the *predicted* UF caseload plus site-related variables. The predicted caseload derives from the family participation model of Sec. IV, which is used in conjunction with another data base, the 1976 Survey of Income and Education (SIE), and with algorithms that compute and assign UF benefits and UI benefits to each family (given its size, state of residence, and husband's wage rate). The SIE is a microdata file containing information on the other variables in the family model (wage rate, education of husband and wife, wife's age, and the presence of younger and older children). The file contains about 50,000 married, spouse-present families with children. Because the SIE also has a state identifier and a family weight, a representative sample of husband-and-wife families with children can be defined for each state.

Let $\hat{p}_{ij}$ be the probability of UF participation as predicted from the family model, for family i living in state j.[1] the predicted caseload in state j equals the weighted sum of $\hat{p}_{ij}$ over all married, spouse-present families with children in state j. Each family is weighted by its SIE family weight. Thus

$$(\text{Predicted Caseload})_j \equiv \hat{C}_j = \sum_{i=1}^{n_j} w_{ij}\,\hat{p}_{ij}$$

where n_j = number of such familes in state j, $\hat{p}_{ij}$ is defined above, and w_{ij} = family weight. This enters the equation to be estimated:

---

[1] Specifically, $\hat{p}_{ij}$ is predicted from the probit regression equations in Hosek (1978), App. D, Cols. 1 and 3, for whites and nonwhites, respectively.

$$\ell n C_j = a_o + a_1 \ \ell n \hat{C}_j + \sum_{k=1}^{K} a_k x_k + \epsilon_j$$

where C_j is the actual UF caseload and x_k are site-related variables omitted from the family participation model.[2] These variables are defined below.

In addition to including these variables, another reason forecasting accuracy increases is that whereas the mean of the family participation equations is centered on the three sites, the mean of the caseload equation is centered on the entire universe of UF states. The mean participation rate in Chicago, Detroit, and Los Angeles metropolitan areas is just over 1 percent, or about 50 percent above the 0.70 percent participation rate for individuals in UF states as a whole. Part of the difference in participation rates is undoubtedly attributable to differences in the levels of explanatory variables (wage, age, education, benefits) between the survey sites and other UF states. But beyond this, part of the difference could be due to the survey sites being high-participation areas for reasons not captured by the explanatory variables. For instance, some unmeasured variables that could affect participation include enforcement of rules and family attitudes toward welfare, and these variables might cause higher UF participation in the survey sites.[3] If so, the family participation regressions would tend to overpredict UF caseload if they were not adjusted. The caseload model provides a basis for adjusting the family participation equations to yield consistent predictions of UF caseload.

THE EFFECTS OF SITE-RELATED VARIABLES

Table 7 presents regression results for the UF caseload model. In addition to the predicted caseload, the explanatory variables include the percent of the population living in a metropolitan area (PERCENT SMSA), the average monthly unemployment rate in 1975 (UNEMPLOYMENT RATE), the error rate in handling the *overall* AFDC caseload (AFDC ERROR RATE), the dollar limit on liquid and semiliquid assets implied by the state's AFDC asset test (ASSET LIMIT), and the total number of years the state has had a UF program (YEARS CASELOAD).[4] The final variable, LAMBDA, is described below.[5]

[2] The semilog form fits the data well and prevents caseloads predicted from the model from being negative. The effects of the site-related variables are virtually the same in the semilog form as in the pure linear form.

[3] To gain some appreciation of the importance of the omission of site-specific variables in the model of family participation, the family participation equation was reestimated introducing two site variables. These dummy variables represent the net effect of the omitted variables plus any other local phenomenon likely to be associated, not necessarily causally, with family participation. A test showed that the two site variables were not statistically significant. The χ^2 statistic on the variables in the probit equation was 0.84 for whites and 3.37 for nonwhites. The 10 percent level of significance for a χ^2 statistic with two degrees of freedom is 4.61, and the 5 percent level is 5.99. Inclusion of the two site dummies did affect the size of the UF benefit coefficient, however, decreasing it for whites and increasing it for nonwhites.

[4] Documentation for the variables appears in Antel et al. (1979).

[5] The model was first estimated on observations from 27 states. Because individual observations can have large effects on the estimated coefficients when the sample is small, the regression was examined for outliers by means of computing Cook's distance and the Andrews-Pregibon statistic for each observation, resulting in the deletion of Minnesota and Washington, D.C. We also verified that the residuals in the regression are approximately normally distributed, so the t-statistics in Table 7 are valid.

Table 7

STATE AFDC-UF CASELOAD MODEL
(t-STATISTIC)
(Dependent Variable in All Regressions: ln State AFDC-UF Caseload)

Explanatory Variable	Alternative Regression Specifications			
	(1)	(2)	(3)	(4)
R^2	.4571	.7169	.7257	.7314
CONSTANT	-2.2212	-4.2119	-3.9160	-3.0964
	(1.03)	(2.48)	(1.95)	(1.26)
ln PREDICTED UF CASELOAD	1.1432	8.9544-01	8.6487-01	7.9087-01
	(4.40)	(4.33)	(3.78)	(3.00)
PERCENT SMSA		2.7216-02	3.4642-02	3.2340-02
		(1.91)	(1.90)	(1.71)
UNEMPLOYMENT RATE		2.7009-01	2.6558-01	2.5374-01
		(2.29)	(1.99)	(1.85)
AFDC ERROR RATE			-6.8432-03	-3.2901-03
			(.34)	(.16)
ASSET LIMIT			8.4533-05	1.5629-04
			(.23)	(.40)
YEARS CASELOAD			-3.3455-02	-3.6497-02
			(.57)	(.61)
LAMBDA				-4.5409-01
				(.60)

NOTES: Number of observations = 25 on all regressions.

Under the null hypothesis that the coefficients on AFDC Error Rate, Asset Limit and Years Caseload are zero, the F statistic for including these variables is F(3,18) = .005 in Col. (3). Since F(3,18) = 3.16 at a 5 percent significance level, the null hypothesis is not rejected. In Col. (4), the F statistic on these variables plus LAMBDA is F(4,17) = .008, whereas F(4,17) = 2.96 at 5 percent significance.

Among these regressors only the urbanization and unemployment rate variables are statistically significant. The urbanization variable is entered to pick up an access effect. The average transit time to an AFDC office tends to be less in a metropolitan area, so the effect of increasing the percentage of urban families should, and does, increase the UF caseload.* The unemployment rate, which measures the percentage of the labor force seeking employment, differs from state to state not only because of differential business cycle effects but also because of persistent differences in the structure of employment. California's unemployment rate always tends to exceed the national average, and Illinois's lies below it, for example. We find that states with higher unemployment rates have higher UF caseloads, but the effect is small. A 1 percentage point increase in the unemployment rate raises caseload by .25 percent. All other employment-type variables that were tried proved to be insignificant.[7]

---

* Other interpretations of PERCENT SMSA may be equally valid. For instance: (1) large metropolitan areas offer a higher chance of "anonymous" participation in welfare, so neighbors might never learn that a family is receiving benefits; (2) the exchange of information about welfare benefits proceeds more efficiently in cities because population density is higher; or (3) families with less welfare stigma are more likely to live in urban areas.

The AFDC error rate provides a summary control for administrative efficiency. Being an average, the error rate could be high because of widespread inefficiency or because a few offices are highly inefficient and the remainder are on par with agencies in other states. As a result, the error rate is far from being a perfect measure. On the positive side, the error rate derives from a federal audit of welfare case records, the objective being to determine whether caseworkers correctly handle information as reported by clients. Because audit procedures apply uniformly across states, differences in error rates do not reflect differences in audit method. Also, the audit focuses on the accuracy of case disposition, not on the accuracy of the input information, which could be inaccurate because of misreporting or fraud by the client. For present purposes the error rate is attractive because it is strictly the result of office procedure, not the joint result of case behavior and office procedure, as would be found in the AFDC denial rate or fraud rate.

No statistical relationship exists between the error rate and the size of the UF caseload. We interpret this as meaning that states which are administratively less efficient are no more likely to make an error in favor of certifying a case as eligible for UF than in wrongfully denying eligibility. This hypothesis received further support when an alternative variable, dollars spent in training AFDC caseworkers per AFDC case, was tried and also proved insignificant. Regardless of the extent of training, no effect exists toward increasing or decreasing the size of the UF caseload.

To be eligible for AFDC, a family's assets must not exceed the allowable limits established by each state (see Sec. I). An important dimension of the assets test is the limit on liquid and semiliquid holdings, which we represent by the variable ASSET LIMIT. The limit encompasses cash, savings balances, stocks, bonds, and the cash value of life insurance policies. The specific terms of this asset limit differ sufficiently across states to require judgment in defining a single variable.[8] Moreover, the variable ASSET LIMIT could contain errors that reduce its statistical significance. Such errors might arise from variance in caseworker understanding and interpretation of the assets test, or from families' incentives to modify or underreport their assets in order to gain UF eligibility. Table 7 shows that a state's limit on liquid and semiliquid assets bears no relationship to the size of the caseload. The result implies that marginally relaxing the asset limit would have no effect on UF participation. Apart from the problem of correctly measuring the asset limit, the finding suggests that families with low earnings potential have a level and composition of assets that satisfy the AFDC asset limit. Modest changes in the asset limit, then, have little effect on UF participation because asset holdings tend to be below the limit in the families most likely to participate in UF.

---

[7] The employment rate, the change in the employment rate from 1974 to 1975, the change in the unemployment rate, the absolute level of employment, and the change in that level.

[8] Antel et al. (1979) explains how we defined ASSET LIMIT and presents the value of the variable for each state.

The YEARS CASELOAD variable captures the idea of program maturation.[9] When a new social program is offered it may take several years for it to attain its equilibrium participation rate. Families may not know of the program or may delay in applying, and the program may not be phased in at the same time throughout the state. However, Table 7 shows YEARS CASELOAD to have no effect on UF caseload, even though the UF program is young in many states and had an average age of only 11 years in 1975.

We conclude the following from the caseload model. First, administrative efficiency, the limit on liquid and semiliquid assets, and the age of the UF program are unrelated to caseload size, holding constant the predicted caseload. The lack of significance and small coefficients of these variables suggest they are not important determinants of the family's probability of participating in UF; consequently, the omitted-variable bias associated with these variables may be negligible. Second, the percentage of the population residing in metropolitan areas and the unemployment rate exert positive effects on caseload size, although the effects are small in absolute size. Because of their importance in the caseload equation, these variables constitute the major source of added accuracy in our capability to predict UF caseloads for purposes of policy evaluation. Indeed, they raise the R^2 of the caseload equation from 0.46 to 0.72 (Table 7, Cols. 1 and 2).

SELECTIVITY BIAS

The UF caseload model specifies a particular structural relationship between the explanatory variables and the dependent variable, state caseload. By assumption, this relationship holds nationwide, but the model can be estimated only on observations from states actually having a UF program. Yet there are reasons to wonder whether UF states constitute a representative sample for determining the true structural equation of the UF caseload, or whether instead the UF states are a selected sample that could produce biased estimates of the caseload model. Perhaps the same forces leading a state to offer UF also encourage it to have a larger caseload. For instance, the presence of the UF program could be partly due to a disposition among state residents and state policymakers to alleviate poverty by means of formal, governmental programs; and at the same time, families in these states may be more inclined to participate in UF than would families in currently non-UF states. Also, caseworkers in UF states might be less stringent in enforcing the assets limit; if so, although the effect of the assets limit on UF caseload is nil in UF states, it may be important in non-UF states.

These considerations imply that the caseload equation may contain a selectivity bias. To control for this possibility, we used a technique suggested by Heckman (1979).[10] This technique requires the prediction of a variable $\hat{\lambda}_j$ for each state, as defined in App C. $\hat{\lambda}_j$ then enters the caseload equation as an explanatory variable. Column 4 in Table 7 shows that the coefficient on $\hat{\lambda}$ is insignificant and, when compared with Col. 3, the coefficients on the other variables scarcely change. As a result, selectivity bias appears to be unimportant in the caseload equation.

---

[9] YEARS CASELOAD, literally the number of years the state had reported a UF caseload, bounds the age of the program from below.

[10] For our purposes, the first step in this technique is to estimate an equation determining the likelihood that a state offers the UF program. The equation is based on the "whole population," that is, all 50 states. As shown in App. C, where the technique and estimates are fully described, the equation offers fairly accurate predictions of the states that operate UF programs. These states can be characterized as urbanized, unionized, and with high AFDC benefit schedules. Variables associated with the composition of employment by industry, state fiscal aspects, race, politics, and religion are not statistically significant, however.

VI. CASELOAD AND COST ESTIMATES OF AFDC-UF POLICY OPTIONS

The UF program is small and appears destined to remain so, barring fundamental changes in its character. Even sweeping changes in UF policy are unlikely to cause soaring increases in UF caseload and cost, according to projections below. Moreover, there is further evidence that families tend not to participate in UF because their labor market opportunities are often preferable. Surprisingly, that seems true over the full spectrum of family earnings capability. If so, what niche can the UF program occupy? Our response to this question leads back to one of the reasons for creating UF, that is, as a source of aid to working poor families who are experiencing transitorily low earnings. Thus, among families with unemployed heads, we examine the incidence of income support via unemployment insurance, a program also directed at the unemployed and underemployed. A substantial gap in support is detected.

UF POLICY OPTIONS

Three options are considered here.[1] Option I would extend UF to all states without changing any eligibility requirements or benefit levels. Options II and III are supplements, or add-ons, to the first option. To alleviate the disparities in AFDC benefit schedules across states (see Fig. 3), these options would establish nationwide benefit floors, but in a manner cognizant of the role of Food Stamps in supplementing state AFDC schedules. Starting with the AFDC level of assistance[2] plus the Food Stamp bonus associated with that level, the benefit schedule would be supplemented, if necessary, by the federal government to reach a floor of 75 percent of the poverty line under option II and 100 percent of the poverty line under option III. No cost of living adjustments are made. The potential benefits—AFDC plus Food Stamps—available to any family would then be at least equal to three-fourths or the full level of the poverty benchmark under options II and III, respectively.[3] These options do not require any change in the administration of the Food Stamp program, e.g., cashing out the coupons or amalgamating the program with AFDC, but only in the perceived closeness of the connection between the AFDC and Food Stamp benefit schedules. Options II and III are alternatives to each other; the projection of caseload and cost begins with the policy of mandating UF to all states, then considers the additional UF caseload and cost under option II versus option III.

---

[1] None of the options involves eliminating the 100-hour rule. Qualitatively, we expect such a change to increase the number of families participating in UF. We cannot estimate the size of the increase, however, because there is no variation in the 100-hour rule, and thus no basis on which to estimate the relationship between UF participation and variation in the rule (Sec. III).

[2] The level of assistance equals the maximum AFDC benefit payment that a given size family could receive in a given state.

[3] One may use the poverty line scale at the bottom of Fig. 3 to see which states are affected by the 75 percent and 100 percent floors. Comparisons should be made with respect to the outer benefit line, which sums AFDC benefits and the Food Stamp bonus.

The options for instituting a benefit floor, apart from whatever political appeal they may hold, serve the purpose of demonstrating the sensitivity of UF caseload and cost estimates to benefit generosity. An alternative approach would have been to increase benefits by, say, a fixed percentage in each state, an action that seems uninteresting and less feasible as a policy option. Nevertheless, the story to be told by the estimates would remain basically the same.[4]

Tables 8, 9, 10, and 11 express the caseload and cost projections for the three policy options. Estimates presented in these and subsequent tables in this section are based on the family model of UF participation, with its projections being adjusted by a factor, computed for each state, deriving from the UF caseload model (see App. D). The 1976 Survey of Income and Education serves as the data source.

Table 8 presents monthly caseload estimates by state and policy option for UF and non-UF states grouped separately. The groupings refer to 1975, and Oklahoma is classified as a UF state even though it dropped the program in autumn of that year. As Table 8 shows, mandating UF to all states would cause a predicted enrollment of 34,000 cases in non-UF states, which represents about a 30 percent increase in the existing 1975 UF caseload of 117,000. The main reasons for the modest increase in caseload are that non-UF states are less populous and have lower AFDC benefits than UF states. Of the 24 non-UF states, 9 have predicted caseloads of less than 300 as compared to 6 of the 27 UF states (including Washington, D.C.).

There are also some demographic differences between UF and non-UF states that affect predicted caseloads via the family participation model, but these differences are not intense. Table 9 contains selected demographic characteristics by state: the number of families potentially eligible for UF, and the percentage of these families with age of the husband less than 30, education of the husband less than 12 years (high school), wage rate of the husband less than $6.00 an hour, and more than two children. The most striking interstate difference among these percentages arises in the wage rate, with non-UF states having a larger percentage of low-wage workers. While that aspect works in favor of higher UF participation, it seems to be more than offset by the lower benefits in those states. To show how these characteristics and UF and UI benefit levels affect UF participation relative to the number of families, Table 9 also reports the unconditional UF participation rate by state. For non-UF states, this rate equals the predicted caseload under option I divided by the number of potentially eligible families, while for UF states the actual caseload is used.

Returning to Table 8, we see that option II, a benefit floor of 75 percent of the poverty line, adds a total of 3500 cases (beyond the 34,000 resulting from option I) in non-UF states. Only 200 cases are added in UF states, and nearly all of these come from Missouri. In other UF states, the benefit schedules generally exceed the benefit floor; the floor therefore has no effect on participation. In contrast, the floor affects half of the non-UF states. Option III, a floor of 100 percent of the poverty line, creates much larger increases in caseload than option II and affects almost all states. About two-thirds of the added cases are in non-UF states, with Arizona, Florida, Tennessee, and Texas showing the greatest gains. The increases total

---

[4] Also, options II and III would affect participation in the FG program, but the analysis of these effects lies beyond the scope of this research.

Table 8

UF MONTHLY CASELOAD PROJECTIONS, BY STATE AND POLICY OPTION, 1975

	Option I	Option II	Option III
		UF Caseload Increase with Benefit Floor:	
State	Predicted 1975 Caseload	75% of Poverty Line	100% of Poverty Line
	A. Non-UF States		
Alabama	1080	194	1375
Alaska	58	0	1
Arizona	2004	104	2385
Arkansas	652	56	698
Connecticut	2754	0	329
Florida	5265	727	7004
Georgia	1144	340	1793
Idaho	92	0	17
Indiana	2791	0	1879
Louisiana	867	201	1223
Maine	420	0	140
Mississippi	114	293	662
Nevada	459	1	340
New Hampshire	223	2	219
New Jersey	10324	0	722
New Mexico	167	6	183
North Carolina	1457	101	1418
North Dakota	42	0	5
South Carolina	532	258	988
South Dakota	39	0	9
Tennessee	1667	654	2746
Texas	1723	592	2828
Virginia	194	0	129
Wyoming	11	0	7
Total	34079	3529	27100

Table 8—continued

State	Option I	Option II	Option III
		UF Caseload Increase with Benefit Floor:	
	Actual 1975 Caseload	75% of Poverty Line	100% of Poverty Line
	B. UF States		
California	36774		253
Colorado	1851		392
Delaware	217		202
D. C.	427		9
Hawaii	394		0
Illinois	14198		1456
Iowa	349		21
Kansas	259		78
Kentucky	2759		794
Maryland	1205	1	932
Massachusetts	3814		1235
Michigan	12074		333
Minnesota	459	8	33
Missouri	18	195	1412
Montana	31		54
Nebraska	28		61
New York	4796		0
Ohio	17609	8	4801
Oklahoma	107		373
Oregon	4396		181
Pennsylvania	4474		257
Rhode Island	565		232
Utah	893		133
Vermont	1000		59
Washington	4129		76
West Virginia	1360		321
Wisconsin	2673		20
Total	116866	204	13718

NOTE: Blank indicates zero increase.

Table 9

AFDC—UF PARTICIPATION RATE AND SELECTED DEMOGRAPHIC CHARACTERISTICS, BY STATE, 1975

State	UF Program	Total Number of Families[a]	UF Caseload[b]	Participation Rate (%)	Percent Age < 30	Percent Education < 12	Percent Wage < $6.00/hr	Percent Children > 2
Alabama		460987	1080	.23	22	35	68	33
Alaska		47960	58	.12	23	16	24	32
Arizona		283074	2004	.71	22	22	54	37
Arkansas		262887	652	.25	19	33	77	32
California	*	2554363	36774	1.44	19	21	43	29
Colorado	*	341622	1851	.54	24	17	50	31
Connecticut		422638	2754	.65	14	23	41	34
Delaware	*	80445	217	.27	19	22	40	31
D. C.	*	48059	424	.88	16	34	52	33
Florida		945913	5265	.56	19	26	65	27
Georgia		612103	1144	.19	20	26	63	32
Hawaii	*	110847	394	.36	16	21	41	33
Idaho		112546	92	.08	23	22	69	38
Illinois	*	1387698	14198	1.02	17	26	37	34
Indiana		747915	2791	.37	22	26	52	31
Iowa	*	394590	349	.09	22	20	61	36
Kansas	*	302113	259	.09	22	16	63	31
Kentucky	*	440009	2759	.63	24	40	67	31
Louisiana		476276	867	.18	21	32	57	37
Maine		138593	420	.30	21	23	74	36
Maryland	*	522636	1205	.23	18	22	38	30
Massachusetts	*	732891	3814	.52	15	23	49	37
Michigan	*	1221851	12074	.99	18	27	36	36
Minnesota	*	528801	499	.09	20	21	50	38
Mississippi		285298	18	.01	23	41	76	30
Missouri	*	585902	927	.16	21	26	56	31
Montana	*	98478	31	.03	18	22	65	37
Nebraska	*	211595	28	.01	21	17	70	33
Nevada		73020	459	.63	21	19	47	31
New Hampshire		114270	233	.20	18	25	61	33
New Jersey		973846	10324	1.06	14	26	40	34
New Mexico		144770	167	.12	25	30	67	39
New York	*	2233434	4796	.21	13	27	42	35
North Carolina		726789	1457	.20	19	39	74	28
North Dakota		89713	42	.05	20	29	73	39
Ohio	*	1447855	17609	1.22	21	28	49	35
Oklahoma	*	355656	107	.03	23	26	69	25
Oregon	*	294615	4369	1.48	20	19	51	31
Pennsylvania	*	1483859	4474	.30	16	27	51	34
Rhode Island	*	116664	565	.48	17	31	60	33
South Carolina		360162	532	.15	21	35	72	30
South Dakota		90980	39	.04	20	26	77	41
Tennessee		540693	1667	.31	23	36	75	27
Texas		1597379	1723	.11	24	30	62	32
Utah	*	175761	893	.22	25	13	56	45
Vermont	*	64705	1000	1.55	18	26	71	39
Virginia		674968	194	.03	19	27	53	29
Washington	*	453686	4129	.91	21	17	41	31
West Virginia	*	224631	1360	.61	20	35	58	31
Wisconsin	*	623166	2673	.43	18	22	51	38
Wyoming		52903	11	.02	22	19	60	34

[a] Married, spouse present families with children less than 21 years old and father less than 65 years old, not institutionalized, incapacitated, or in armed forces.

[b] Actual caseload in UF states; predicted caseload under option I for non-UF states.

27,000 cases in non-UF states and 14,000 in UF states, or a sum of 43,000 over the 34,000 produced by option I above.

Table 10 summarizes the projected total and incremental monthly caseloads by policy option. Mandating UF to all states would lead to a projected national caseload of 151,000, of which 23 percent would reside in the 26 previously non-UF states. Adding on the lower benefit floor would scarcely raise the total, and even the high benefit floor would leave the caseload below 200,000.

The total and incremental costs of each policy option are shown in parts A and B of Table 11. Part B breaks the incremental cost into three components: AFDC benefits, Food Stamp Bonus, and (for options II and III) the federal supplement. The cost figures reveal the maximum amount of AFDC benefits and Food Stamp bonus that would be paid. It is a maximum amount because AFDC benefits are determined as the level of assistance available to a participating family, and the Food Stamp bonus is determined under the assumption that family income equals the level of AFDC assistance and no more, and the assumption that every UF family participates in the Food Stamp program. The federal supplement for a family is defined as the amount, if any, to be added to AFDC and Food Stamp benefits to bring the level of assistance to the benefit floor. Cost figures for the federal supplement can also be viewed as maximums.

Thus, option I would cost $13.4 million per month, option II would cost an additional $1.9 million, and option III (rather than option II) would cost an additional $25.7 million. Of the $13.4 million, $9.2 arises from AFDC benefits and $4.2 from Food Stamp bonuses. Under existing cost-sharing arrangements, the federal government would pay about 60 percent of the $9.2 million, or $5.5 million. The Food Stamp program being wholly federal, the added federal outlay under option I amounts to $9.7 million per month or $116 million per year. State and local government outlays (for AFDC payments) would be $3.7 million per month or $44.4 million per year.

Adding option II or option III to option I generates two kinds of effects on costs. The first is an increase in the number of UF participants, and the second is an increase in the amount that UF participants (new as well as old) could receive in benefits. Both effects raise costs.

With the benefit floor set at 75 percent of the poverty line, the incremental costs (i.e., costs beyond those of option I) would be $0.6 million per month each in AFDC benefits and Food Stamp bonuses, and $0.7 million per month in the federal supplement. In line with the fact that most of the additional caseload under option II would occur in what are currently non-UF states, most of these added outlays would be directed there. The total increase in federal outlays would be $1.7 million per month, which may be compared with about $0.2 million per month for state outlays.

The same qualitative pattern arises under option III, but now a greater share of the costs emanates from UF states. For the United States as a whole, option III entails increased disbursements of $9.8 million per month in AFDC benefits, $5.8 million per month in Food Stamp bonuses, and $10.0 million per month as the federal supplement to support the benefit floor. Hence, total added federal outlays are about $21.2 million per month ($254 million per year) and added state outlays are $4.4 million per month ($53 million per year). (The cost increments would be considerably larger if the effects of FG participation and benefits were also included.)

Table 10

PROJECTED TOTAL AND INCREMENTAL UF MONTHLY CASELOAD, BY POLICY OPTION

Policy	Non-UF States	UF States	All States
A. Projected Total UF Caseload (1975)			
Base: Mandating UF to all states	34079	116866	150945
Add-on			
Benefit floor = 75% poverty line	37608	117070	154678
Benefit floor = 100% poverty line	61119	130044	191163
B. Projected Incremental UF Caseload (1975)			
Base: Mandating UF to all states	34079	0	34079
Add-on			
Benefit floor = 75% poverty line	3529	204	3733
Benefit floor = 100% poverty line	27040	13178	40218

Table 11

PROJECTED INCREMENTAL MONTHLY COST, BY POLICY OPTION

(In $ thousand)

Policy	Non-UF States	UF States	All States
A. Projected Incremental Cost (1975)			
Base: mandating UF to all states	13461	0	13461
Add-on			
Benefit floor = 75% poverty line	1782	109	1891
Benefit floor = 100% poverty line	16359	9341	25700
B. Sources of Incremental Cost (1975)			
Base: mandating UF to all states			
AFDC benefits	9228	0	9228
Food Stamp Bonus	4233	0	4233
Total	13461		13461
Add-on			
Benefit floor = 75% poverty line			
AFDC benefits	563	40	603
Food Stamp Bonus	530	32	562
Federal supplement	689	37	726
Total	1782	109	1891
Benefit floor = 100% poverty line			
AFDC benefits	5367	4503	9870
Food Stamp Bonus	4005	1793	5798
Federal supplement	6987	3045	10032
Total	16359	9341	25700

Together, Tables 8 through 11 reveal that mandating UF to all states would add 34,000 cases at a monthly cost of $13.4 million, about 72 percent of which would be federally borne. The addition of a generous benefit floor (100 percent of the poverty line) would nearly triple the overall cost ($13.4 million under option I plus $25.7 million under option III) but would cause only an additional 26 percent rise in total caseload (from 151,000 to 191,000).

The Westcott Decision

In June 1979 the U.S. Supreme Court ruled in the case of *Califano* v. *Westcott*, unanimously deciding that Section 407 of the Social Security Act—the section pertaining to the UF program—was unconstitutional. By limiting eligibility to unemployed fathers, UF drew a sex-based distinction that violates the "due process" clause of the Fifth Amendment. A likely consequence of the Westcott ruling is to broaden UF to include eligible families where either the mother or father is unemployed. The effect will be to increase the number of families participating in the revised program, which will be called Unemployed Parent (UP).

This program change occurred too late to be included in the policy predictions just presented. However, to offer some perspective on the number of families likely to be added to the caseload, Table 12 shows the number of families[a] with working wives, by poverty status, in 1975. Of the 1.56 million families below the poverty line, about 630,000 families had working wives (i.e., the wife reported earned income in 1975).

As a rough guide, one may assume that only families with working wives would be affected by the extension of UF to families with wives unemployed during some part of the year. But clearly not all of the 630,000 would be eligible for aid. In many cases the family's income would exceed the state's AFDC level of need. Also, some of the wives, when unemployed, would be eligible for unemployment insurance benefits and might prefer these to AFDC-UF benefits. Because unemployment insurance benefits do not place limits on family income, the wife's drawing UI would not inhibit the husband from earning as much as possible. Thus family income with the wife on UI and the husband working might exceed the family income limit on UP. Finally, some eligible families simply might not want to participate in UP. *Thus, of the 630,000 poor families with working wives, the number actually choosing (or eligible) to participate in UP might be severalfold less.* This conjecture squares with Podoff's (1979) estimates, which place the number of additional cases at less than 100,000, with the specific prediction varying with changes in the underlying assumptions regarding implementation of the Westcott decision. Podoff also observes that some families with unemployed wives will be drawn to UP from the General Assistance program, their present source of aid.

Another factor is that families with two or more earners are likely to "work themselves off" UP faster than families with only one earner. This might cause a shorter average case duration among UP-wife families, many of whom may have multiple earners (especially working husbands) as compared to UP-husband families. In that event, the UP caseload would rise by a smaller percentage for a 1 percent increase in UP-wife cases than for a 1 percent increase in UP-husband cases. Putting the point differently, if unemployed-wife families had the same per

---

[a] Husband-and-wife families with related children under age 18.

Table 12

NUMBER OF FAMILIES[a] WITH WORKING WIVES, BY POVERTY STATUS, 1975
(thousands)

Number of Workers in Family	Number of Families	
	All Income Levels	Below Poverty Line
1 Worker	8699	826
Wife a worker	285	66
Year-round, full-time	115	11
Wife not a worker	8414	760
2 or More Workers	16001	741
Wife a worker	13236	563
Year-round, full-time	4488	83
Wife not a worker	2766	178

SOURCE: Current Population Reports, Series P-60, No. 106, June 1977, *Characteristics of the Population Below the Poverty Level: 1975*, Table 17, p. 83,

[a] Husband-and-wife families with related children under age 18.

month probability of entering UP as did unemployed-husband families, the increase in UP caseload attributable to unemployed-wife families would be smaller than that attributable to unemployed-husband families, because the unemployed-wife families would leave UP sooner.

DISTRIBUTIONAL ASPECTS

Section IV offers behavioral evidence that family participation in UF is negatively related to variables reflecting market-earnings potential (wage, age, and education). In line with this, one would expect many married, spouse-present families with children to have earnings that exceed the benefits available to them on UF. This pattern, in turn, would be consistent with the implication of the family model that UF participation would be low if market-earnings opportunities with the family off UF dominate benefits and earnings available on UF.

Table 13 arrays families by the husband's wage rate, a chief measure of family earnings potential. Focusing on Panel A (all states), we find that the UF participation rate—predicted monthly percentage of families on UF—declines with wage rate. As expected, families with lower earnings potential are more likely to be on UF. More remarkable, the UF participation rates are low even in the lowest wage classes, a result consistent with the level of earned income being high relative to UF benefits. A husband earning $4.50 an hour would receive about $9000 annually if employed full time throughout the year, yet family income in this wage class is seen to equal $12,849, or over $3800 more. These additional earnings tend to reflect the labor force participation of the wife, which rose dramatically from 30.5 percent in 1960 to 45.0 percent in 1976 (Bednarzik and Klein, 1977).

Table 13

UF PARTICIPATION AND FAMILY INCOME, BY HUSBAND'S WAGE CLASS, 1975

Husband's Wage Rate ($/hr)[a]	Total No. of Families[b]	Predicted Monthly Caseload	Predicted Monthly Percent on UF	Average Income, All Families ($/yr)				Percent Ever on Food Stamps Jan-June 1976
				Earned Income	Nonearned Income I[c]	Nonearned Income II[d]	Total[b] Income	
				A. ALL STATES				
<2.00	563,148	9,396	1.67	7,516	283	955	8,753	16.95
2.00-2.99	1,539,945	15,433	1.00	9,344	211	837	10,392	13.19
3.00-3.99	2,967,796	22,423	0.76	11,149	293	808	12,250	8.99
4.00-4.99	4,300,369	30,674	0.71	12,849	319	922	14,092	5.88
5.00-5.99	4,910,606	26,879	0.55	15,239	286	1,067	16,593	3.65
6.00-6.99	4,200,331	19,339	0.46	17,515	216	1,218	18,950	2.22
7.00-7.99	2,957,484	10,503	0.36	20,243	161	1,207	21,613	1.31
8.00-8.99	1,913,078	5,367	0.28	22,943	117	1,330	24,393	0.78
9.00 +	3,918,838	8,101	0.21	30,286	97	1,815	32,227	0.54
				B. UF STATES				
<2.00	282,019	6,589	2.34	8,045	377	1,053	9,476	15.16
2.00-2.99	708,298	10,722	1.51	9,834	267	906	11,008	11.25
3.00-3.99	1,482,334	15,919	1.07	11,294	364	884	12,542	10.01
4.00-4.99	2,492,568	23,759	0.95	12,706	396	960	14,063	6.87
5.00-5.99	3,090,556	21,205	0.69	15,139	353	1,039	16,532	4.52
6.00-6.99	2,849,686	15,998	0.56	17,395	254	1,192	18,842	2.55
7.00-7.99	2,037,348	8,506	0.42	20,042	191	1,148	21,382	1.36
8.00-8.99	1,357,436	4,548	0.34	22,861	131	1,326	24,320	0.88
9.00 +	2,735,667	6,790	0.25	30,058	109	1,787	31,971	0.54
				C. NON-UF STATES				
<2.00	281,129	2,807	1.00	6,984	188	856	8,028	18.75
2.00-2.99	831,647	4,711	0.57	8,926	164	778	9,867	14.84
3.00-3.99	1,485,462	6,504	0.44	11,005	222	732	11,958	7.98
4.00-4.99	1,807,801	6,915	0.38	13,047	213	870	14,131	4.51
5.00-5.99	1,820,050	5,675	0.31	15,409	174	1,114	16,698	2.16
6.00-6.99	1,350,645	3,340	0.25	17,768	137	1,273	19,179	1.53
7.00-7.99	920,136	1,997	0.22	20,689	93	1,336	22,124	1.21
8.00-8.99	555,642	819	0.15	23,142	81	1,339	24,573	0.54
9.00 +	1,183,171	1,311	0.11	30,812	70	1,878	32,817	0.55

SOURCE: 1976 Survey of Income and Education.

[a] Husband's wage rate = annual earnings ÷ (weeks worked x usual hours per week).

[b] Married, spouse present, with children less than 21 years; husband less than 65 years, able to work, not institutionalized or in armed forces.

[c] Nonearned Income I = AFDC, public welfare, and the sum of employment insurance benefits and veteran's pension if the husband received unemployment insurance benefits. (UI benefits and veteran's pension income are not reported separately on the SIE.)

[d] Nonearned Income II = other nonearned income (interest, dividends, property income, pensions, plus veteran's payments if the husband did not received UI benefits).

In addition to earned income, many families received nonearned income. As a partial control for the presence of transfer income in nonearned income, we have defined two categories of nonearned income. The first, Nonearned Income I, includes various sources of transfer income: AFDC, Supplemental Security Income, General Assistance, and unemployment insurance[*] plus veteran's pensions if the husband received UI benefits. (The combination of UI benefits and veteran's pensions must be used because these are not reported separately for the family.) The second, Nonearned Income II, consists of nontransfer income: interest, dividends, rental income, property income, veteran's pensions (if the husband did not receive UI benefits), and other pensions. In every wage class, the total amount of nonearned income (I plus II) exceeds $1000 a year on average in the United States. Moreover, upwards of three-fourths of this income comes from nontransfer sources, implying that many families have sources of income that help tide them over periods of joblessness, even if they do not apply for, or qualify for, various kinds of transfer income.

These findings hold for UF and non-UF states alike, as panels B and C of Table 13 reveal. However, the levels of transfer income are lower in non-UF states, reflecting less generous General Assistance and Unemployment Insurance benefit schedules. Also, UF and non-UF states have similar patterns of family participation in the Food Stamp program (last column), ranging from over 15 percent in the lowest wage class to about 0.5 percent in the highest wage class during the January-June period of 1976. (Other estimates of Food Stamp program usage—coupons purchased, total bonus—have not been computed, nor have estimates of other in-kind benefits such as housing and Medicaid.)

Table 13 is not meant to imply that poverty is nonexistent among married, spouse-present families. The average incomes reported in the table do demonstrate that many families received more income being off UF than they could have expected to receive on UF. Yet in any given year, a large number of families experience transitorily low incomes because of reduced hours of work or unemployment. Emphasis on the transitory nature of income reductions is consistent with the relatively high turnover among the UF caseload. Wiseman's (1976) results for UF cases in Alameda County, California, indicate (by my calculation) a mean duration of nearly 7.7 months, with figures of 11 months for blacks and about 6 months for whites, Chicanos, and others. Rydell et al. (1974), studying AFDC cases in New York City, report data suggesting an average duration of 9 months. The overall durations from the Wiseman and Rydell studies appear close, and much of the disparity between them may be due to differences in the ethnic composition of the New York City and Alameda County caseloads. Contrasting to these figures, female-headed families (FG cases) in New York City averaged over two years on AFDC, with one-third of the families entering in a given month remaining on for over 3 years. The short length of stay among UF families reflects the mobility of the caseload, a mobility driven predominantly by changes in employment status and hours of work. In the Rand survey of UF families, over three-fourths of the families leaving welfare gave as their reason either a new job or a job earnings increase.

[*] Unemployment insurance benefits are not truly transfer income, but are conditioned on the husband's unemployment and may contain a large transfer component in the sense that recipients' benefits exceed their contributions.

Inferring from the federal eligibility requirements for UF, the program has been targeted on intact families whose heads work part time or are unemployed. Empirical analysis (Sec. IV) suggests that families view UF as a substitute for UI in the sense that higher potential UI benefits decrease the probability of UF participation. But in fact not all husbands (or wives) qualify for UI benefits when unemployed.

Thus a special role for UF lies in offering support to unemployed persons not otherwise covered by UI. Table 14 shows the annual incidence of unemployment among husbands and the percent of unemployed husbands who did *not* receive UI benefits. Panel A refers to all husbands, and Panel B refers to those with 15 or more

Table 14

UNEMPLOYMENT, RECEIPT OF UI BENEFITS, AND PREDICTED UF PARTICIPATION RATES, BY HUSBAND'S WAGE CLASS, 1975

Husband's Wage Rate ($/hr)	Percent Unemployed	Percent Did Not Receive UI Benefits, Given Unemployment	Predicted UF Participation Rate		
				Received UI Benefits	
			Not Unemployed	Yes	No
A. All Husbands					
<2.00	22.2	41.9	1.42	2.50	2.54
2.00-2.99	18.0	32.3	0.94	1.46	1.12
3.00-3.99	16.3	18.1	0.70	1.18	0.83
4.00-4.99	13.4	7.7	0.66	1.15	0.94
5.00-5.99	11.9	3.4	0.49	1.02	0.92
6.00-6.99	9.8	3.3	0.44	0.75	0.54
7.00-7.99	8.7	6.5	0.32	0.80	0.57
8.00-8.99	8.4	19.2	0.26	0.64	0.30
9.00+	8.3	18.5	0.18	0.57	0.41
B. Long-Term Unemployed (15+ Weeks)					
<2.00	9.0	53.0	--	3.36	4.70
2.00-2.99	6.8	43.3	--	1.66	1.44
3.00-3.99	7.9	41.0	--	1.33	0.99
4.00-4.99	7.5	25.7	--	1.38	1.16
5.00-5.99	6.0	23.9	--	1.13	1.18
6.00-6.99	4.3	25.1	--	0.84	0.61
7.00-7.99	3.5	21.2	--	0.77	0.69
8.00-8.99	3.1	17.8	--	0.72	0.16
9.00+	3.3	22.0	--	0.70	0.27

weeks of unemployment—the long-term unemployed.[7] Long-term unemployed accounted for about 40 percent of the total unemployed during 1975, a year of high unemployment. The table reveals large fractions of unemployed low-wage workers receiving no UI benefits, particularly among the long-term group.[8] For example, 6.0 percent of all husbands with a wage rate between $5.00 and $5.99 experienced 15 or more weeks of unemployment in 1975. Of these, 23.9 percent, or 70,400 husbands, received no UI benefits.

Although we have not been able to study what fraction of these husbands would participate in UF, we have utilized the UF family participation model to predict UF participation rates for husbands in various categories: not unemployed during 1975; unemployed and received UI; unemployed and did not receive UI; long-term unemployed and UI; and long-term and no UI. The predictions appear in the right-hand columns of Table 14. A prominent feature of the table is that families with unemployed husbands are 50 to 100 percent more likely, within any given wage group, to be on UF than families without unemployed husbands. Consequently, it seems likely that the factors leading toward greater unemployment are at the same time associated with a higher chance of UF participation. Finally, there are only minor differences in predicted UF participation rates by receipt of UI benefits or by duration of unemployment.

---

[7] Long-term unemployed are usually defined as having 15 or more weeks of unemployment in a given stretch. Here, the long-term have 15-plus weeks in a year, not necessarily in one stretch.

[8] In Panel A the percentage of unemployed not receiving UI benefits rises among high-wage classes, probably because of very short spells of unemployment due to temporary layoffs or prior to beginning a new job which was located while on the last job. Typically, covered persons must be unemployed at least one week before qualifying for UI benefits; receipt of UI benefits therefore will tend not to occur among briefly unemployed persons.

VII. AFDC-UF VERSUS NEGATIVE INCOME TAX PROGRAMS

INTRODUCTION

Negative income tax (NIT) programs have occupied center stage in debates over welfare reform during the present and two previous administrations. NITs' potential virtues include horizontal equity and administrative efficiency, to mention two. Horizontal equity involves extending income maintenance to married, spouse-present families as well as to individuals (single family heads), and instituting a nationwide benefit schedule, perhaps adjusted for regional differences in cost of living. States could choose to supplement the level of benefits available under an NIT; specifically, states could retain their AFDC programs, albeit probably without federal cost-sharing, in order to target added benefits on certain groups as defined by state-set eligibility criteria.

The prospects for horizontal equity under an NIT resemble those attainable under the UF policy options considered in Sec. VI. Mandating UF to all states would result in universal income maintenance for married, spouse-present families with children. In addition, setting benefit floors of 75 percent or 100 percent of the poverty line would even out some of the interstate disparities in benefits available under AFDC and Food Stamps. Still, the options in Sec. VI would leave the scope of UF smaller than that of NIT because UF would continue to exclude individuals or husband-and-wife families without children. Of course, UF could be broadened to include them, and the 100-hour rule could be removed as well.

There is scanty evidence on the relative administrative efficiency of an NIT versus the existing (or incrementally modified) set of welfare programs. Even if an NIT did not require an assets test, the need for frequent and accurate income accounting remains.

Moreover, recent attempts to control fraud and reduce duplication of effort in processing AFDC case records appear promising, as witnessed by the Colorado Monthly Reporting Experiment (Williams, 1978). Given these developments, there seems to be no prima facie case that an NIT administration would be more efficient than the diverse administrations of AFDC, Food Stamps, and possibly other programs (SSI, housing) that an NIT might replace.

Proposed changes in the federal income maintenance package raise numerous behavioral questions, ranging from effects on participation to labor supply, fertility, family stability, nutrition, and education/training decisions. Foremost among these, judging from the quantity of research, are the effects on labor supply. Recent research based on income maintenance experiments (Cogan, 1978; Spiegelman et al., 1978) leaves little question that labor supply reductions occur among recipients. In aggregate, these reductions cause substantial increases in NIT program cost in the form of forgone wages (less work effort). Because of similarities in benefit level and marginal tax rate, one expects labor supply reductions on UF also, although no research results are known to us. But the diminutive size of the predicted UF caseload implies that the absolute cost of the program, including the "hidden cost" of forgone earnings, will be an order of magnitude below the cost of an NIT.

Equally important, the comparisons below underscore the importance of the participation decision as a determinant of program cost. It is suggested that microsimulations of NITs exaggerate the caseload and cost of these programs, as a consequence of the nonempirical methodology used to determine whether a family participates. An empirical approach, such as the one employed in this study, may be a preferable foundation for policy evaluation.

COMPARISON OF AFDC-UF AND NIT PARTICIPATION ESTIMATES

Table 15 displays the predicted number of participating families and participation rates under nationwide UF and alternative NITs (Keeley et al., 1977; Greenberg and Hosek, 1976). As seen on the right-hand side of the table, UF participation equals less than 1 percent per month. With an average duration of stay on UF of about nine months, the number of different families on UF during a year would be about 2.1 times the monthly caseload.[1] As a result, annual participation rates would be less than 2 percent per year, as shown in panel A of Table 15. In contrast, the studies of NIT predict annual participation rates ranging from 5 to 60 percent, an enormous difference.

The difference is partly due to the inclusion of families without children in the NIT studies. In 1975 there were 41.8 million husband-and-wife families with heads below age 65;[2] of these, 26.5 million had children less than age 21. Even if the NIT participation rates were halved as a gross adjustment for the difference in base populations, large differences between UF and NIT participation rates would remain. Such differences cannot be attributed to benefit levels, for the UF programs in conjunction with the benefit floor are at least as generous as the NIT programs. Marginal tax rates, however, are only roughly comparable across programs.

Under UF the marginal tax rate depends on whether the family also participates in Food Stamps, Medicaid, or housing assistance; the tax rate is endogenous to the family. Much the same would be true under an NIT, but simulations of NITs have not taken full cognizance of the point. Instead, Medicaid and housing program participation have been disregarded vis-à-vis their effect on the marginal tax rate, while the Food Stamp program itself is assumed to be rolled into the NIT benefit schedule. The effects of Medicaid and housing have been omitted, not because authors are ignorant of the interdependence between program participation and tax rates, but because of data deficiencies. Thus in Table 15 the marginal tax rates of alternative NITs should be interpreted as program-specific tax rates rather than the exact tax rate facing each family. Similarly, the UF tax rate of "about 0.7" reflects the AFDC program tax rate of 0.67 above the first $30 per month of net earnings, in conjunction with the Food Stamp program tax rate (decline in the Food Stamp bonus as income rises), which varies with family size and level of income. With these points understood, it seems likely that the caseload projections of the

---

[1] An average duration of stay of nine months implies that, in equilibrium, one-ninth of the UF caseload is replaced each month. If the number of UF cases in January equals C, then the number of UF cases during the year equals C(1 + 11/9). But some of these cases will consist of the same families reentering UF, so the number of different families on UF will be less, say C(1 + 10/9), roughly. Therefore, multiplying the monthly caseload by (1 + 10/9) = 2.1 approximates the number of different families on UF during a year.

[2] U.S. Bureau of the Census (1977).

Table 15

NUMBERS AND PERCENTAGES OF ALL MARRIED, SPOUSE-PRESENT FAMILIES WITH CHILDREN, PARTICIPATING IN AFDC-UF AND NEGATIVE INCOME TAX PROGRAMS

Marginal Tax Rate	Benefits		
A. Present Study: AFDC-UF (1976 Data)			
	AFDC Benefits, Food Stamp Bonus, Plus		
	No Further Supplement	Benefit Floor = 75% of Poverty Line	Benefit Floor = 100% of Poverty Line
About 0.7			
Families per month			
No. of families	151,000	155,000	191,000
% of all families	0.56	0.58	0.72
Families per year			
No. of families	317,000	326,000	401,000
% of all families	1.18	1.22	1.51
B. Keeley et al. Study: Negative Income Tax (1975 Data)			
	Guarantee for a Family of Four		
	50% of Poverty Line	75% of Poverty Line	100% of Poverty Line
0.5			
No. of families per year	2,400,000	7,600,000	15,700,000
% of all families	9.1	28.7	59.2
0.7			
No. of families per year	1,300,000	2,800,000	5,800,000
% of all families	4.9	10.6	21.9
C. Greenberg-Hosek Study: Negative Income Tax (1973 Data)			
	Guarantee for a Family of Four		
	80% of Poverty Line	100% of Poverty Line	
0.5			
No. of families per year	4,300,000	7,300,000	
% of all families	16.2	27.5	
0.7			
No. of families per year	2,300,000	3,700,000	
% of all families	8.7	14.0	

present study are more comparable with NITS having a marginal tax rate of 0.7 rather than 0.5. At the higher tax rate the break-even income of NITs is lower and fewer families are eligible for benefits; consequently, predicted NIT participation is smaller, although still far larger than predicted UF participation.

Beyond benefit levels and tax rates, other factors differentiating predicted participation in UF and NIT programs include methodology, eligibility requirements, unemployment insurance, participation costs, and welfare stigma. Both the Keeley et al., and Greenberg-Hosek studies base the participation decision on a comparison of current with predicted income and hours of work. Predicted hours of work, hence predicted income under an NIT, derive from defensible statistical analyses of hours of work behavior (Keeley et al. use experimental data and Greenberg-Hosek use survey data). In contrast, the present study relies on an empirical analysis of the participation decision itself. The analysis takes direct account of an assets limit and unemployment insurance, and indirect account of other eligibility rules, participation costs (information gathering, time costs of applying and recertification) and welfare stigma insofar as they are embedded in the constant terms of the family and caseload models. Although the NITs being simulated had no eligibility requirements other than an income test, in practice there still would be UI, participation costs, and welfare stigma to consider. By not empirically evaluating the effects of these variables on participation, the NIT participation rates may be biased upward from true rates.

With respect to the effect of UF eligibility requirements on participation, we have argued that the prior-work rule and WIN registration requirements of UF are easily satisfied. Also, the state caseload model indicates that the limit on liquid and semiliquid assets has no effect on caseload size, and many states impose no limit on the value of one's home. Hence the role of assets tests in limiting the UF participation rate may be small.[3] The 100-hour rule operates to confine the program to families experiencing a *transitory reduction* in income due to unemployment or underemployment of the head, as well as to some families in which the head simply prefers to work part time. The 100-hour rule may be effective in restraining UF participation, but we have argued that its effect is mitigated by the presence of the income test, which would have to be satisfied even if the hours test were removed. Consequently, if the assets test, hours limit, prior-work rule, and WIN registration requirements are only weak deterrents to family participation in UF, then the UF and NIT programs emerge as very close relatives. Moreover, the astonishing discrepancy in participation reported in Table 15 serves notice of a potentially gross overestimation of NIT enrollment and, by the same token, program cost. Whereas past research has focused on the labor-supply effects of NITs, there is now the suggestion that participation behavior could be the preeminent factor governing size and cost.

But this is not to deemphasize the potential policy role of UF. As we show, the immediate extension of UF to non-UF states can initiate the process of extending income maintenance to married, spouse-present families with children at relatively low cost. Other modifications in UF—mitigating the 100-hour rule and the assets tests, for instance—could be done sequentially, while monitoring the cost and effectiveness of the program over time. Thus the UF program could metamorphose into a virtual NIT.

---

[3] The assets test can be viewed as a residual screen: Most families passing the income test and 100-hour rule are likely to pass the assets tests. Nevertheless, aggregation bias and errors in the variables, two estimation problems that could be present in the caseload model, urge caution in evaluating the effect of assets tests, and we are not ready to conclude confidently that assets tests are superfluous. To the extent the assets test constrains UF participation, it tends to focus the program on *persistently poor* working families. In contrast, families with temporarily low income would have greater assets, and are therefore more likely to be screened out by the assets test.

Appendix A

COMPUTATION OF THE FOOD STAMP BONUS

The Food Stamp bonus is defined as the difference between a family's monthly allotment of Food Stamps and the purchase requirement of the stamps. The purchase requirement depends on family size and on monthly net income as determined under the Food Stamp program.[1] For example, in 1976 a family of four had an allotment of \$166 per month. With a monthly net income of \$350, the purchase requirement was \$95, which implies a Food Stamp bonus of \$166 − \$95 = \$71.

To compute monthly net income, the Food Stamp regulations permit several deductions from gross income. These deductions include mandatory income deductions (such as state, local, and federal taxes, union dues, contributions to pension funds, and Social Security taxes), medical costs, education fees, payment for child care when necessary to let a household member work or take part in job training, unusual expenses (fire, flood, theft, hurricanes, funerals), court-ordered support and alimony payments, and shelter costs that exceed 30 percent of family income as calculated after all other deductions. Shelter costs include rent or mortgage payments, utility fees, and real estate taxes. Utility fees consist of heating fuel, electricity, basic service fees for one telephone, water, and sewage fees.

The data used in this study do not contain information on a family's deductible expenses. Consequently, we have assumed that each family has a \$70 per month shelter deduction and no other deductions. There is no pretext of a solid defense for this assumption, but it seems reasonable and is in line with the assumption on shelter allowance utilized in the Congressional Budget Office study of the proposed program for Better Jobs and Income.[2] An illustration follows.

Consider the AFDC-UF program. In this report the family's potential benefits under UF are defined as the AFDC guarantee level plus the Food Stamp bonus. The AFDC guarantee level is the level of AFDC benefits assuming the family has no earned or unearned income and hence no mandatory income deductions. Next, we assume that the family's medical expenses, child care, tuition, and court-ordered support payments are zero. Only a shelter deduction will be claimed. According to Food Stamp rules, net Food Stamp income will then be

$$\begin{aligned} Y_{net} &= \text{AFDC} - (\text{Shelter Costs} - 0.30 \times \text{AFDC}) \\ &= \text{AFDC} - 70, \text{ by assumption.} \end{aligned}$$

If AFDC benefits were \$400 per month, a \$70 shelter deduction would correspond to shelter costs of \$190 per month (\$190 − 0.3 × \$400 = \$70). Using net Food Stamp income and information on the family size, one determines the purchase requirement and the Food Stamp bonus. The Food Stamp bonus is added to the AFDC guarantee level to obtain the family's potential benefits on UF.

A similar procedure is followed in estimating the family's potential benefits under Unemployment Insurance. Beginning with the husband's wage rate, a potential UI benefit is determined from the UI benefit schedule assuming the husband has no earned income. The UI benefit, family size, and shelter allowance of $70 per month are then used to compute a Food Stamp bonus. Finally, potential benefits under UI equal UI benefits plus the Food Stamp bonus.

---

[1] U.S. Department of Agriculture (1976).

[2] Congressional Budget Office (1978).

Appendix B

DIFFERENCE BETWEEN AFDC-UF AND UNEMPLOYMENT INSURANCE BENEFITS, BY HUSBAND'S WAGE RATE AND FAMILY SIZE, FOR LOS ANGELES, CHICAGO, AND DETROIT METROPOLITAN AREAS

(In $ per Month)

Metropolitan Area and Wage Rate	Family Size			
	3	4	5	6
Los Angeles				
$3/hr	47	89	129	171
$4/hr	2	45	84	127
$5/hr	-36	6	46	88
$6/hr	-63	-11	29	71
Chicago				
$3/hr	-2	28	64	100
$4/hr	-65	-35	1	37
$5/hr	-125	-94	-58	-22
$6/hr	-184	-154	-118	-82
Detroit				
$3/hr	30	76	123	169
$4/hr	-45	2	49	95
$5/hr	-113	-55	-2	45
$6/hr	-147	-100	-53	-6

Appendix C

SELECTIVITY BIAS IN THE CASELOAD EQUATION

Heckman (1979) proposes a two-step method for controlling selectivity bias. First, one estimates a model predicting the probability of a state's having a UF program. Second, based on the state participation equation, one computes a correction factor, which then enters the UF caseload equation (LAMBDA in Table 7). Heckman's model assumes normally distributed error terms in the state participation equation and the state caseload equation. If the errors have nonzero covariance, then estimating the caseload equation on the subset of states having a UF program yields biased coefficients. But it is known that if the true caseload equation is $C_j = X_j' \alpha + \epsilon_j$, then the expected value of a caseload equation estimted on a sample of UF states is

$$E(C_j | \text{UF program}) = X_j' \alpha + \frac{\sigma_{12}^{1/2}}{\sigma_{22}^{1/2}} \lambda_j ; \text{ where } \lambda_j = \frac{\phi(Z_j' \gamma)}{\Phi(Z_j' \gamma)}$$

$\Phi(Z_j' \gamma)$ is the probability that state j has a UF program, and $\phi(Z_j' \gamma)$ is the density of the probability function evaluated at the point $Z_j' \gamma$, where Z_j are state characteristics and γ are the parameters relating these characteristics to the propensity for participation. Thus Heckman's approach suggests estimating λ from a state UF participation equation, then adding the estimate. $\hat{\lambda}_j$, to The state UF caseload model. In the presence of $\hat{\lambda}_j$ the estimates of the structural coefficients α are statistically consistent, as desired. Further, the sign of the coefficient on $\hat{\lambda}_j$ tells whether the errors in the state participation and state caseload equations are positively or negatively correlated. A positive (negative) coefficient, for example, means that states more likely to have a UF program are more (less) likely to have a larger UF caseload. A zero coefficient implies that the error terms are uncorrelated and that the sample of UF states will yield consistent estimates of the UF caseload parameters.

Table 7 shows the result of introducing the LAMBDA correction. LAMBDA's coefficient is not statistically different from zero, and changes in the other coefficients are negligible. We conclude that Col. (3) in Table 7, without the censoring correction, provides acceptable estimates of the UF caseload model.

The equation underlying LAMBDA contains information on variables associated with state participation in UF. The equation shows that the main determinants of whether a state offers UF are the level of AFDC benefits, the extent of unionization, and the extent of urbanization. Increases in these variables increase the probability that the state has a UF program. We also find that in states that rely in part on local government financing of AFDC, the probability is slightly lower.

Table C-1 presents means (by UF and non-UF states) and elasticities of the explanatory variables in the state participation model. In conjunction with Table C-1, Fig. 7 depicts the predicted probabilities of state participation and reveals the

Table C.1

MODEL OF STATE PARTICIPATION IN AFDC-UF: MEANS AND ELASTICITIES OF EXPLANATORY VARIABLES

Variable	Mean		Elasticity
	Non-UF State	UF State	
Fiscal			
Per capita income ($/yr)	5292	5969	-0.65
State and local government expenditure as % of state income	18.9	18.5	-1.86
Local financing of AFDC (yes/no)	0.17	0.21	-0.15*
AFDC benefits ($/mo)	227	331	2.93***
Employment by industry			
% agriculture	6.0	3.4	0.42
% manufacturing	10.0	11.4	-0.81
% service	9.3	10.2	-0.82
Unionization: % employees in unions	16.9	26.5	1.79**
Urbanization: % population in SMSAs	46.0	69.6	2.10**
Race: % nonwhite	13.0	12.2	0.11
Politics: % Democrat	43.1	46.6	0.00
Religion			
% Jewish	0.8	1.9	-0.17
% Catholic	16.0	23.0	-0.11

NOTE: Statistical significance of coefficient:

* = .11
** = .05
*** = .01

high accuracy of the model. Seven kinds of variables are defined: fiscal, employment by industry, extent of unionization, urbanization, race, politics, and religion. These variables have been selected for predictive purposes, not on the basis of a theoretical model of state participation, but in response to some exploratory hypotheses. Hypotheses relating to such variables have received detailed attention in political science studies of the diffusion of social programs (Gray, 1973; Walker, 1969), and therefore need not be perceived as being motivated solely by economic models.

Two of the fiscal variables are significant. States where local governments pay a share of AFDC costs are less likely to have a UF program, but states with relatively generous AFDC benefit schedules (characterized by the level of AFDC assistance for a family of four) are more likely to. We interpret AFDC assistance as a revealed preference toward income maintenance and find it interesting that per capita income has no direct effect on state participation in UF, although states with higher per capita incomes have higher AFDC benefits.

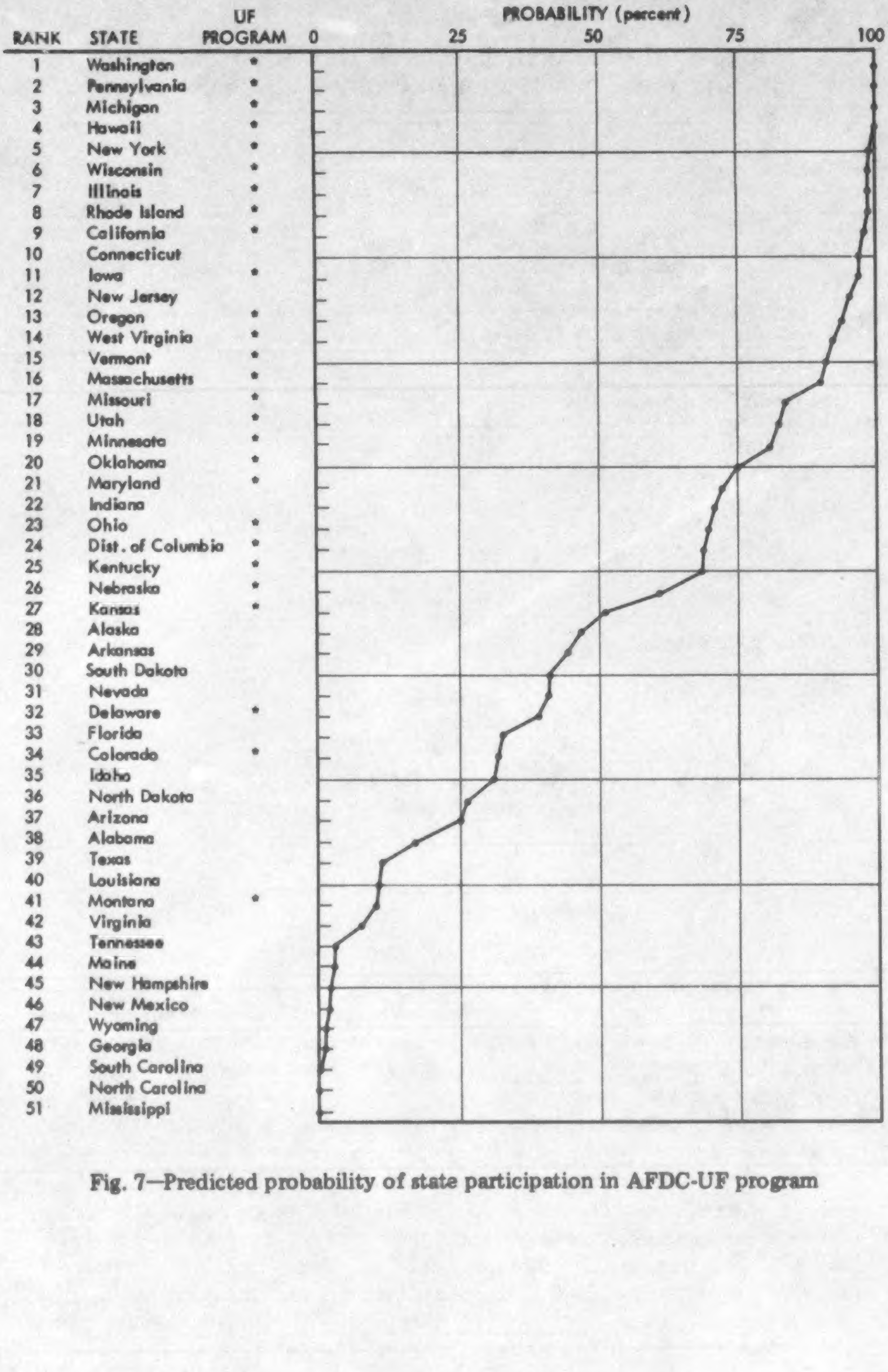

Fig. 7—Predicted probability of state participation in AFDC-UF program

The variable on state and local government spending as a percent of state income helps measure the reliance on government as a means of providing services. This variable also has no effect on state participation in UF.

The employment variables (percent of employees in agriculture, manufacturing, and services) were entered because a study of AFDC cases in California found UF families more likely to have heads who worked in agriculture and services than in manufacturing (Abrahamse et al., 1977). Because agriculture and services are also likely to have a relatively high percentage of workers not covered by unemployment insurance, one might expect the demand for supplemental income support coverage to be higher in states with large agriculture and service sectors; but as it turns out, the employment composition variables are unrelated to whether a state offers UF.

States with a higher percentage of employees in unions are more likely to have UF. Federal regulations permit states to choose whether to allow striking workers to go on UF if they are otherwise eligible, a fact which could motivate union lobbyists to favor UF as a potential supplement to union strike funds.

Finally, urban states tend to have UF programs, perhaps because such programs are more accessible, hence more effective, in urban areas. The race, politics, and religion variables, however, are not significant; they apparently make UF programs neither more nor less likely.

Appendix D

ADJUSTMENT FACTOR FOR THE AFDC-UF FAMILY PARTICIPATION MODEL

Let $\hat{p}_{ij}$ be the predicted probability of family participation in UF, based on the family model, for family i in state j. The explanatory variables of the family model are UF benefits; UI benefits; husband's wage rate and years of school; wife's age, age squared, and years of school; and the presence of young children (0 to 5 years) and of older children (15 to 20 years). Separate models were estimated for whites and nonwhites; a Hispanic/other dummy is included in the nonwhite model. Define w_{ij} as the weight attached to the family observation to make the sample of families representative of the population of such families in the state. Expected UF caseload in state j equals

$$\sum_{i=1}^{n_j} w_{ij} \hat{p}_{ij}$$

where n_j is the number of families in the sample in state j. This caseload prediction will be denoted $\hat{C}_j$.

The cross-state model of UF caseload relates actual caseload to $\hat{C}_j$, state unemployment rate, percentage of the population living in SMSAs, the error rate in processing AFDC cases, the limit on liquid and semiliquid assets, and the number of years the state has had a UF program. Let $\hat{\hat{C}}_j$ be the predicted caseload using the cross-state model. $\hat{\hat{C}}_j$ predictions should be more accurate than $\hat{C}_j$ predictions of state caseload because more variables serve as predictors and because the caseload model is estimated on observations from the entire population of UF states rather than on only three sites within UF states, as underlie the $\hat{C}_j$ predictions. The added accuracy of the $\hat{\hat{C}}_j$ predictions has been verified by computing two goodness-of-fit statistics, the sum of absolute deviations

$$\sum_j | C_j - \hat{C}_j | \text{ versus } \sum_j | C_j - \hat{\hat{C}}_j |$$

and the sum of squared deviations

$$\sum_j (C_j - \hat{C}_j)^2) \text{ versus } (\sum_j (C_j - \hat{\hat{C}}_j)^2 .$$

Both tabulations favor the state caseload model.

To utilize this extra information in making UF cost and caseload estimates, we define an adjustment factor for each state, θ_j, which equals C_j/C_j. The adjustment factor is then applied to caseload predictions based on the family participation model, where two different kinds of predictions are made, one for mandating UF to non-UF states and the other for adding a benefit floor. The benefit floor shifts the benefit schedule in low-benefit states. Under the first kind of prediction, in which benefit schedules and eligibility requirements in each state are unchanged, the adjustment factor serves to make the family model prediction exactly equal to the caseload model prediction:

$$\text{Final predicted UF caseload} = \theta_j \hat{C}_j = \hat{\hat{C}}'_j$$

Under the second kind of prediction, a new state caseload is computed, assuming a benefit schedule as would exist in the presence of the benefit floor. Let $\hat{C}'_j$ denote this prediction. Then

$$\text{Final predicted UF caseload} = \theta_j \hat{C}'_j$$

and the θ_j again serves to modify, or normalize, the prediction so as to include information about the cross-state structure.

BIBLIOGRAPHY

Abrahamse, Allan F., David M. De Ferranti, Patricia D. Fleischauer, and Albert J. Lipson, *AFDC Caseload and the Job Market in California: Selected Issues*, The Rand Corporation, R-2115-CDOBP, January 1977.

Antel, John, Richard Buddin, and James R. Hosek, *AFDC-UF Cross-State Data Base, 1975*, The Rand Corporation, N-1008-HEW, April 1979.

Bednarzik, Robert W., and Deborah P. Klein, "Labor Force Trends: A Synthesis and Analysis," *Monthly Labor Review*, October 1977, pp. 3-12.

Boland, Barbara, "Participation in the Aid to Families with Dependent Children Program (AFDC)," in U.S. Congress, Joint Economic Committee, Subcommittee on Fiscal Policy, *Studies in Public Welfare—The Family, Poverty, and Welfare Programs: Factors Influencing Family Instability*, Paper No. 12, Part I, Washington, D.C., 1973.

Cogan, John F., *Negative Income Taxation and Labor Supply: New Evidence from the New Jersey-Pennsylvania Experiment*, The Rand Corporation, R-2155-HEW, February 1978.

Congressional Budget Office, *The Administration's Welfare Reform Proposal: An Analysis of the Program for Better Jobs and Income*, Washington, D.C., April 1978.

Deutermann, William V., Jr., "Another Look at Working Age Men Who Are Not in the Labor Force," *Monthly Labor Review*, June 1977, pp. 9-14.

Gray, Virginia, "Innovation in the States: A Diffusion Study," *American Political Science Review*, Vol. 67, No. 4, December 1973, pp. 1174-1185.

Greenberg, David H., and James R. Hosek, *Regional Labor Supply Response to Negative Income Tax Programs*, The Rand Corporation, R-1785-EDA, February 1976.

Hall, Robert E., "Turnover in the Labor Force," *Brookings Papers on Economic Activity*, No. 3, 1972, pp. 709-756.

Heckman, James J., "Sample Selection Bias as a Specification Error," *Econometrica*, Vol. 47, No. 1, January 1979, pp. 153-161.

Hollenbeck, Kevin M., *An Analysis of the Impact of Unemployment and Inflation on AFDC Costs and Caseloads*, Mathematica Policy Research, Washington, D.C., February 1975.

Hosek, James R., *Unemployment Patterns Among Individuals*, The Rand Corporation, R-1775-EDA, August 1975.

Hosek, James R., *Family Participation in the AFDC-Unemployed Fathers Program*, The Rand Corporation, R-2316-HEW, August 1978.

Hosek, James R., *An Introduction to Estimation with Choice-Based Sample Data*, The Rand Corporation, P-6361, July 1979.

Joint Economic Committee, *Handbook of Public Income Transfer Programs*, Washington, D.C., 1972.

Keeley, Michael C., et al., *The Labor Supply Effects and Cost of Alternative Negative Income Tax Programs: Evidence from the Seattle and Denver Income Maintenance Experiments, Part II*, RM-39, Stanford Research Institute, Menlo Park, California, May 1977.

Lidman, Russell M., "Why Is the Rate of Participation in the Unemployed Fathers Segment of Aid to Families with Dependent Children (AFDC-UF) So Low?" Institute for Research on Poverty, Discussion Paper No. 288-75, Madison, Wisconsin, November 1975.

Lippman, S., and John J. McCall, "The Economics of Job Search: A Survey," *Economic Inquiry*, Vol. 14, 1976, pp. 155-189, 347-368.

Manski, Charles F., and Steven R. Lerman, "The Estimation of Choice Probabilities from Choice-Based Samples," *Econometrica*, Vol. 45, No. 8, November 1977, pp. 1977-1988.

Mincer, Jacob, *Schooling, Experience, and Earnings*, National Bureau of Economic Research, Washington, D.C., 1974.

Platky, Leon D., "Aid to Families with Dependent Children: An Overview, October 1977," *Social Security Bulletin*, Vol. 40, No. 10, October 1977, pp. 17-22.

Podoff, David, "Cost Estimates for Changing the AFDC-Unemployed Father Program to an AFDC-Unemployed Parent Program, Pursuant to *Califano* v. *Westcott*," Social Security Administration, Family Assistance Studies Staff, SRV-97, July 1979.

Rein, Mildred, *Conflicting Aims in AFDC-UF*, SWRRI Publication No. 11, Social Welfare Regional Research Institute, Boston College, Chestnut Hill, Massachusetts, August 1972.

Rydell, Peter C., et al., *Welfare Caseload Dynamics in New York City*, The Rand Corporation, R-1441-NYC, October 1974.

Smith, James P., *The Distribution of Family Earnings*, The Rand Corporation, P-6249, October 1978.

Smith, Rodney T., "Welfare Reform and Housing Assistance," The Rand Corporation, R-2333-HUD, (forthcoming).

Spiegelman, Robert G., Lyle P. Groeneveld, and Philip K. Robins, "The Work Effort and Marital Dissolution Effects of the Seattle and Denver Income Maintenance Experiments," *Materials Related to Welfare Research and Experimentation*, Senate Finance Committee, Subcommittee on Public Assistance, U.S. Government Printing Office, Washington, November 1978, pp. 111-132.

State of California, Department of Benefit Payments, *Social and Economic Characteristics of Families Receiving Aid During April 1976*, March 1977.

U.S. Bureau of the Census, *Current Population Reports*, Series P-60, No. 106, "Characteristics of the Population Below the Poverty Level: 1975," U.S. Government Printing Office, Washington, D.C., 1977.

U.S. Bureau of the Census, *Statistical Abstract of the United States: 1978*, 99th ed., Washington, D.C., 1978.

U.S. Department of Agriculture, *The Food Stamp Program*, PA-1123, Washington, D.C., September 1976.

U.S. Department of Agriculture, Food and Nutrition Service, *Food Stamp Program: Statistical Summary of Operations, March 1978*, Washington, D.C., 1978.

U.S. Department of Health, Education and Welfare, *Characteristics of State Plans for Aid to Families with Dependent Children, 1976 Edition*, Washington, D.C., 1976.

U.S. Department of Labor, Bureau of Labor Statistics, *Geographic Profile of Employment and Unemployment, 1975*, Report 481, Washington, D.C., 1977.

Walker, Jack L., "The Diffusion of Innovations Among the American States," *American Political Science Review*, Vol. 63, No. 3, September 1969, pp. 880-899.

Williams, Robert G., "Statement," in *Materials Related to Welfare Research and Experimentation*, Senate Finance Committee, Subcommittee on Public Assistance, Washington, D.C., November 1978, pp. 133-141.

Wiseman, Michael, "Change and Turnover in a Welfare Population," Working Paper No. 70, Income Dynamics Project, University of California, Berkeley, August 1976.